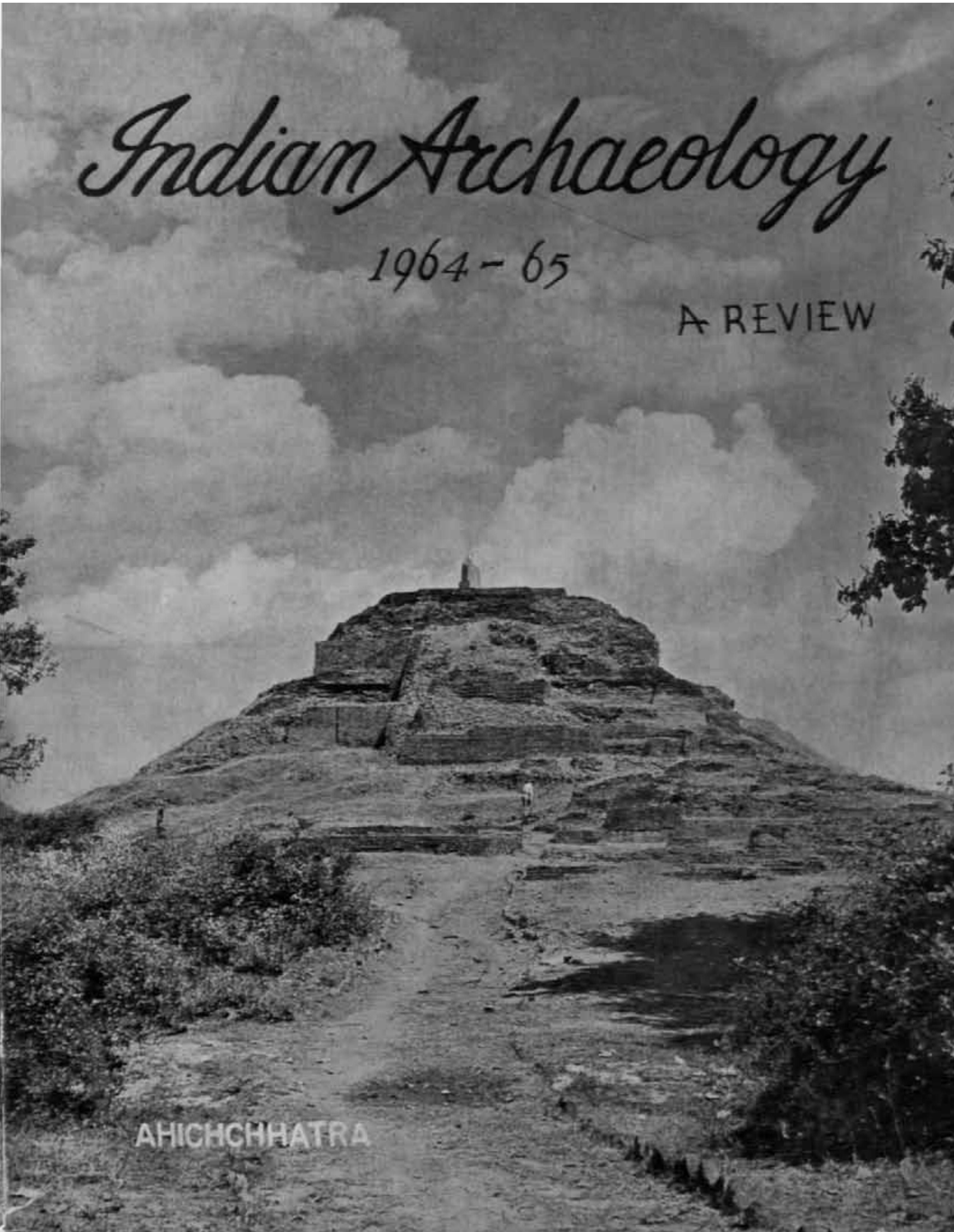
Indian Archaeology 1964-65

A REVIEW



INDIAN ARCHAEOLOGY 1964-65
—A REVIEW

EDITED BY **A. GHOSH**

Director General Archaeological Survey of India

ARCHAEOLOGICAL SURVEY OF INDIA
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PREFACE

I acknowledge with gratitude my indebtedness to all those who contributed material to this number of the annual *Review*. Due to the diversity of the material incorporated herein and the vastness of the subject, the possibility of a few editorial inaccuracies cannot be ruled out, for them I must apologize. However, in regard to factual information and the interpretation of data the responsibility rests with the contributing parties.

I am thankful to my colleagues and staff-members for the assistance rendered by them in bringing out the *Review*.

I cannot finish this preface without a personal note. I started this *Review* in 1954 almost as an experimental measure, explaining in the Preface thereof its scope. Thereafter the arrangement of the items appearing in the subsequent numbers has been improved to the best of my ability and the subject-matter has become more comprehensive. At present hardly any publication on Indian archaeology can do without referring to some matter or the other appearing in the *Review*. This shows that the experiment has been a success. Unfortunately, due to circumstances beyond our control there has been of late some time-lag between the period covered by each number and the date of its publication. I am shortly retiring from my present position, so that this will be the last number edited by me, but I earnestly hope that under my successor, Shri B.B. Lal who will be the next editor, the arrears will be cleared up and the *Review* will make itself all the more useful to Indian archaeology.

New Delhi; A. GHOSH
The 1st February 1968

CONTENTS

INDIAN ARCHAEOLOGY 1964-65

-A REVIEW

I. EXPLORATIONS AND EXCAVATIONS

ANDHRA PRADESH

1. EXPLORATION IN DISTRICT ADILABAD.—-Shri S. Nagabhushana Rao, a research student of the Deccan College Post-graduate and Research Institute, Poona, discovered a Middle Stone Age site at Asifabad. The Peddavagu river and the Tiranivagu river, flowing on either side of Asifabad town, have exposed along their banks a well-stratified gravel-horizon yielding Middle Stone Age implements, made on chert, jasper, agate, quartz and fine-grained quartzite. While a larger number of the tools are made on flakes, some nodules and flake-blades are also available.

A rolled cleaver, made on limestone, was found loose in the bed of the Peddavagu river.

2. EXCAVATION AT POCHAMPAD, DISTRICT ADILABAD.—The Department of Archaeology, Government of Andhra Pradesh, continued *(Indian Archaeology* 1963-64—*A Review*[1], p. 1) its excavation at Pochampad, a megalithic site on the right bank of the river Godavari. The excavated burials included cairn-circles, cists and platforms. The cairn-circles were found to entomb rectangular pits, oriented north-south, in which were deposited pots of the Black-and-red Ware and other associated all-black and red wares and iron implements such as lances or javelins, daggers with copper hilts, sickles and axes. An interesting find of the latter category was a strapped axe resembling a modern sandal. In addition, terracotta figurines of diminutive size and archaic features were also obtained from the excavation.

3. EXPLORATION IN DISTRICT ANANTAPUR.—The Department of Archaeology, Government of Andhra Pradesh, during the course of an exploration in the District, discovered near Timmapuram, 8 km. from Guntakal railway-station, a disturbed mound yielding ground celts of neolithic complex.

4. EXPLORATION IN DISTRICT CHITTOOR—Shri M. L. K. Murty, a research student of the Deccan College Post-graduate and Research Institute, Poona, discovered blade tools, resembling the typical Upper Palaeolithic of Europe, on a site near Vedullacheruvu, north-north-east of Renigunta, the site being situated on the eroded red-silt deposit. The tool assemblage, made on fine-grained quartzite and quartizitic chert, comprises blades (parallel-sided and blunted back), points, a few burins and lunates.

It may be recalled that previous exploration (1963-64, p. 1) on this river yielded stratified deposits of Early and Middle Stone Age tools, as well as microliths. Thus, the discovery of this typical blade-industry makes it one of the likely areas in India, where a full sequence within the Old Stone Age may be obtained.

Dr. K. D. Banerjee and Shri M. V. N. Krishna Rao of the Prehistory Branch of the Archaeological Survey of India[2] collected, during their exploration in the District, several Early Stone Age tools from : Gundrajukuppam; area near 37 km. stone on the

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1This publication is referred to in the following pages by the year only.

2The Archaeological Survey of India is referred to in the following pages as the 'Survey.'

Arkonam-Tirupathi road; flood-plain of the Katur-nadi, a few kilometers from Kalahasti; and area near 25 km. stone on the Kalahasti-Tiruvallur road.

5. EXPLORATION IN DISTRICT "CUDDAPAH.—Shri K. T. Reddy of the Department of Archaeology, University of Saugar, brought to light, during his exploration in the District, about twenty-five prehistoric sites in the vicinity of Cuddapah town, the more important of which were : Chinatarampalle, Chinnayapalle, Darga, Gottapalle, Kalsapadu, Kondapeta, Kottapalle/ Mydakur, Nandapalle, Proddatur, Puttaipalle, Sagileru Project. Tamballapalle and Vadaamanipalle. Tools variously belonging to the Early, Middle and Late Stone Ages were collected.

The survey of the rivers Sagilleru and Bokkineru in the locality also showed stratified deposits from where Early and Middle Stone Age tools were obtained.

6. EXPLORATION IN DISTRICT GUNTUR.—The Department of Archaeology, Government of Andhra Pradesh, located remains of a *stupa* in a mound near Dachepally on the banks of Naguleru. In addition, a Prakrit inscription, written in Brahmi characters and containing the name of the founder of the Ikshvaku dynasty, was also found. On palaeographic grounds the inscription may be dated to *circa* A.D. 300.

7. EXCAVATION AT DHARANIKOTA, DISTRICT GUNTUR.—In continuation of the previous year's work (1963-64, p. 2), Shri K. Raghavachary of the South-eastern Circle of the Survey, resumed excavation at sites DKT-1 and DKT-3. The objective of this season's dig Was to locate the habitation-area within the fortifications. With this end in view these cuttings were further extended on the inner side respectively to a length of 22-86 m. and 24-38 m.

At DKT-1, it was revealed that the actual habitation commenced almost from the toe of the rampart. In the extended part of the cutting, the cultural sequence brought to light fully corresponds to that obtaining in the make-up of the fort-wall. In addition some hitherto-unrecorded features relating to the cultural and social life of the people were also noticed.

Period I was associated essentially with the Black-and-red Ware of megalithic fabric. A hearth with vent-holes, suggestive of its use by the users of the laterite ridge was found within the strata of this Period.

Period II witnessed regular habitation-activity, as indicated by the occurrence of post-holes, drains or cut-channels (pi. I A). The associated pottery consisted of the megalithic Black-and-red Ware. Noteworthy finds recovered from this Period included a goldsmith's mould, glass bangles and ear-rings of a bewildering variety and shape (pl. II A).

Period III also showed some structural activity in the shape of drains and soak-pits, indicative of sanitary development of the settlement. Glass bangles of various colours (pl. II B) continued to be used during this Period as well. The Rouletted Ware appeared in this Period.

Period IV was represented by a circular brick structure (pl. I B), possibly a well or a barn and another structure, the complete plan of which still remains to be ascertained The ceramic content of this Period comprised, besides the megalithic Black-and-red and the Rouletted Wares, the all-black, the red and the grey wares. The last mentioned was the dominant industry.

Period V was a continuation of Period IV and was not very sharply defined

Period VI was noted for its finds, particularly coins of the late Satavahana period and an inscribed ivory seal (PI. II C) showing *stupa* with railings and bearing a four

letter inscription. On palaeographic grounds the seal may be ascribed to the second-third century A.D. This is fully consistent with the date assignable to the coins.

Period VII was represented by a tiled platform, being the latest structural activity before the final abandonment of the site. The finds obtained from the associated strata showed a mixed harvest.

In cutting DKT-3, where the northern half of the southern side of the fort-wall was exposed, most of the structural phases of DKT-1 were duly encountered. Whereas Phases 1 to V did not show any significant variation from the structural details revealed in cutting DKT-1, Phase VI showed interesting features of repairs resulting from heavy erosion in the laterite-gravel and brick-revetment. Special care was taken to prevent unforseen events by building cross brick-wall packed with alternate layers of *kankar* and mud.

In front of the brick wall was located an ashy patch from which were collected crucibles and other antiquities including coins of the late Satavahanas. One of the coins bears the inscription *sirisa*, which on palaeographic grounds can be ascribed to the second or third century A.D. Pottery recovered from this Phase included the megalithic Black-and-red Ware and plain red were. Fragments of an amphora were also obtained from the associated deposit.

In Phase VII, rubble walls were built to stop further erosion by rains or floods. One such single-course rubble wall was exposed in this cutting.

8. EXPLORATION IN DISTRICT KURNOOL.—Shri V. R. Reddy, a research student of the Deccan College Post-graduate and Research Institute, Poona, explored the western part of the District and discovered : Early and Middle Stone Age sites at Akavidu, about 23 km. north of Giddalur town on the river Gundalakamma and on a non-perennial stream known as Peethirivagu and Araveetikota, 1.5 km. south-west of Akavidu village, located on a seasonal stream Araveetivagu; Late Stone Age sites at Chinnako-thaliki, Johrapuram, Madhavaram, Mantasale (Mantralayam) and Peddakothaliki, all located on the right bank of the Tungabhadra river; and neolithic sites at Adoni, Chetnepalli and Hattibelagallu.

Of these, the sites at Adoni and Hattibelagallu had also been visited by Foote, but at the former site he could not collect any neolithic implement. The present exploration, however, yielded plenty of neolithic implements in various stages of manufacture. At the same site, a large number of blades and microliths were also found. In a rock-shelter, to the west of the town, were seen paintings of a deer and an elephant, in faded colours.

Besides. Gurzala, Nagaldinne and Rayachoti, which had earlier been explored by Foote and Subbarao, were also further surveyed. No new observations, however, were made.

In continuation of the previous year's exploration (1963-64, p.4), Shri B. Raja Rao of the South-eastern Circle of the Survey reported the discovery of a chalcoli-thic site, over 1 km. south-west of Rupanagudi village, and obtained black-painted red pottery. Besides, he also located early historical sites at Bijinavemula, Kolimigundla, Mayaluru, Mudigodu, Rupanagudi and Sanjimula, and temples of the Chalukyan period at Akumalla, Alluru, Itikyala, Kolimigundla, Mayaluru and Velagaturu in Taluk Koilkuntla.

9. EXPLORATION IN DISTRICT MEDAK.—In continuation of the previous explora tion (1963-64, p. 4) Shri M. Sivayya of the South-eastern Circle of the Survey dis-

covered, in the course of his exploration, remains of temples belonging to the medieval period at Choutkur, Marvelli, Musalapur, Sarfpalli in Taluk Andol and Haveli-Bhupati pur, Ibrahimpur and Kistapur in Taluk Medak.

10. EXCAVATION AT YELESWARAM, DISTRICT NALGONDA.—The Department of Archaeology, Government of Andhra Pradesh, under Shri Mohd. Abdul Waheed Khan, resumed (1963-64, p.4), excavation at Yeleswaram for the fourth season. More megalithic burials of the types of dolmenoid cists, cairn-circles, and urns were excavated. These yielded pottery of the megalithic Black-and-red Ware, red and all-black wares and iron implements like sickles, lances, swords, javelins, daggers, etc.

In the temple-area, the other end of the *mandapa* was exposed. The excavation yielded a rich array of finds including terracotta figurines, both human and animal, including moulds (pl. Ill), iron implements, bangles, coins and moulded pottery.

Noteworthy finds of the period were the five miniature votive shrines, found very close to the temple complex. These shrines have a low *adhishthana,* a flat *kapota* and a *vimana* of two steps surmounted by a semi-circular *sikhara.* One of the shrines contained an inscription, the characters of which are similar to those of the Vishnukundin period, datable to *circa* fourth century A.D. In addition, the shrines have a *linga* on *vedi* inside. It may not be out of place to mention that during the last field-season a hoard of forty coins of the Vishnukundins had been obtained from within a pot overlying the Ikshvaku levels. This would support the view that the immediate successors of the Ikshvakus were the Vishnukundins and not the Pallavas, as previously held. Other miniature shrines contained sculptures of Siva as Ardhanarisvara, Hari-Hara, Uma-Mahesvara and *linga* on *vedi.*

ASSAM

11. EXPLORATION IN DISTRICT GARO HILLS.—In continuation of the previous work (1963-64, p. 4), Professor M. C. Goswami of the University of Gauhati explored the Rongru hill area, bounded by the Chitra streamlet and Chitra abri (hill), Dipu abri and Rongram Chimbima and collected as many as two hundred ninety-four neolithic imple ments from an area of nearly 7-77 sq. km. The implements included: celts; axes; hoes, quite a large number being shouldered; adzes; hammerstones; and chisels (fig.I).

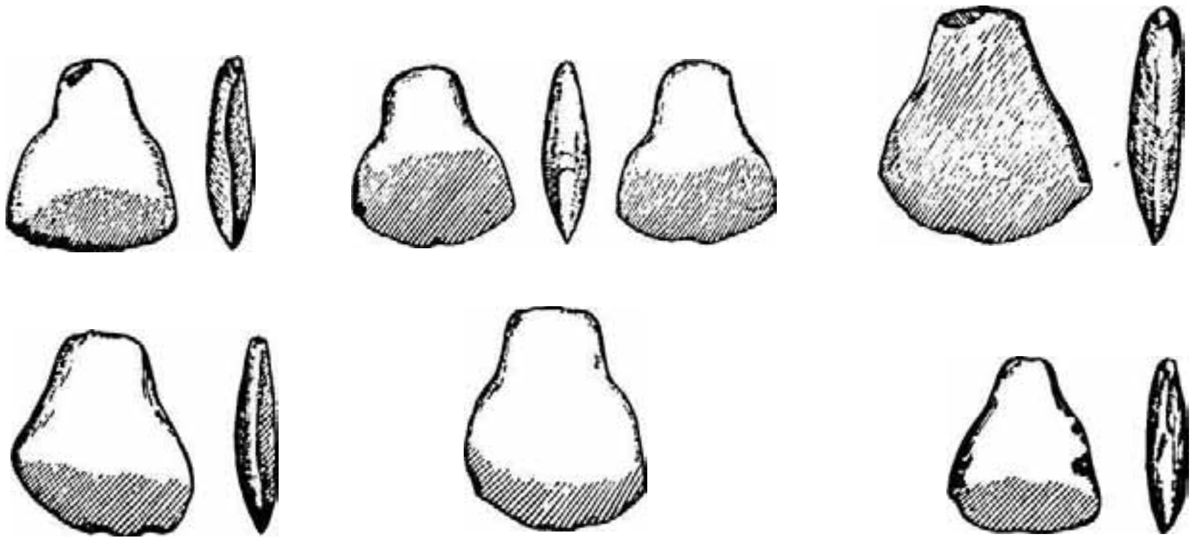


FIG. 1. *Garo Hills: neolithic implements*

BIHAR

12. EXCAVATION AT ANTICHAK, DISTRICT BHAGALPUR.—In continuation of the previous year's work (1963-64, p. 5), the Department of Ancient Indian History and Archaeology, University of Patna, under Professor B. P. Sinha and Dr. R. C. P. Singh, resumed the clearance-work of the north-eastern quadrant of site ACK-IV. This season's work revealed Terraces I and II of the *stupa* (pl. IV), Terrace III being already exposed last year.

To the north of the *stupa,* the plastered floor of Terrace I, bordered at its extreme eastern end on the north by bricks, was located. Towards the southern end of this floor were found stone pedestals measuring approximately 20 X 20 cm. To the east of the *stupa,* brick-pavements were observed in the alignment of the floor of Terrace I. Eight projections, approximately at right angles to each other, were observed in the walls and Terrace I. On each turning, a weep-hole attached with a stone drain was also found.

Terrace II was 2-97 m. above Terrace I and was approached from the latter through a side-staircase, two risers of which were found attached with the main stairway in the centre. It had a well-plastered sand-and-lime floor. Eight projections were also noticed for this Terrace, and on each turning was found a flat rectangular black stone, measuring 78 X 53 cm. In the centre of this Terrace offsets of walls were seen, above which were found fifty-seven terracotta plaques representing various aspects of the Buddha, a lady engaged in toilet, a female attendant massaging the legs of her mistress, etc. The collection also included an interesting figure of a half-male and half-female, possibly representing Ardhanarisvara. Besides human figures, the plaques depicted animals like elephants, lions, horses, deer, parrots and votive *stupas* and *mangala-kalasas.* From the debris were also recovered several stone statues including that of the Buddhist goddess Tara, two terracotta sealings, inscribed votive *stupas,* the inscription on both the sealings being largely blurred. Amongst other finds mention may be made of one iron spearhead, a chisel and several pieces of nails.

13. EXPLORATION IN DISTRICT HAZARIBAGH.—During his recent exploration along the river Damodar near Ramgarh a few Early Stone Age sites were discovered by Shri A. K. Ghosh of the Department of Anthropology, University of Calcutta. " A large number of implements comprising choppers and scrapers of different types were collected by him both as *in situ* and as surface-finds.

The specimens *in situ* were unearthed from the thick secondary laterite deposit, yellowish brown in colour. The local quarry-section revealed the following stratigraphical sequence (from bottom upwards) : red rock lateritic gravels, 1 -52 m.; secondary laterite, 4 57m.; and recent alluvium, .35 m. The sites were always found to be located on the high bank of the river, away from the present course.

14. EXPLORATION IN DISTRICT RANCHI—Shri A. K. Ghosh of the Department of Anthropology, University of Calcutta, explored some parts of the District and covered the upper Subarnarekha and its tributaries like the Jumer, Potopto and Sapahi. At some of the discovered sites like Namkum, Sabia and Tanti Silwali, Early Stone Age implements, such as choppers, handaxes and scrapers, were unearthed from the lateritic gravels overlain by a thick silt. Flake-blades on quartz and quartzite were collected from the upper loose gravels in the valley of the Subarnarekha and Sapahi near Namkum. At most of the places the overlying silt deposit was found to be eroded. The upper reddish soil of the area also yielded microliths of different types.

15. EXCAVATION AT SARADKEL, DISTRICT RANCHI.—With a view 10 finding out the real nature and content of the cultures represented by the Asura sites and to deter mining their chronological position in relation to other known cultures of the northern plains, the Mid-eastern Circle of the Survey, under Dr. S.C. Ray, assisted by Shri A.D.P. Singh, Shri B. K. Sharan and Shri P. K. Sharan, undertook excavation at Saradkel in Sub-division Khunti. Located on the left bank of the river Tajna, the mound of Saradkel rises to a maximum height of 9 m. above the surrounding plains and covers an overall area of 14-16 hectares (pl. Y).

Excavation revealed two occupational Periods, belonging essentially to the same culture. Although no building remains of Period I were unearthed in the limited area under excavation, the occurrence of baked bricks in the strata belonging to this Period clearly suggested the use of bricks. A number of pits were encountered, which, from their contents of charcoal, iron slag and sand, would appear to be iron-smelting ovens.

Period II was marked by an intensive building-activity. A massive defence-wall consisting of baked bricks (size 41 X 26 X 7 cm.) was raised along the periphery of the mound in alignment with the course of the river, apparenly to protect the settlement as much from human onslaught as from ravages of flood. The defence-wall at some places stands to a height of as many as fourteen courses of bricks laid in alternative rows of headers and stretchers. The houses of this Period were oriented roughly along the cardinal directions. Although baked brick was the normal building-material, in the construction of some of the houses mud-bricks were also used. The floors were often made of brick-bats set in a clay base and solidly rammed; floors of full-sized bricks were also present at some places. In one of the rooms was found a stone anvil which might have been used for beating iron slag.

The pottery was mostly wheel-made and characterized by a coarse fabric, thick section and terracotta-red colour. A few examples of grey and black-and-red fabrics were also noticed. The shapes represented are the jar, bowl and vase. The assemblage of such typical forms as the ledged lid, flat-based bowl, sprinkler, combined with incised decorated designs strongly suggests a Kushan complex.

Amongst other finds; iron objects of diverse utility and shape (pl. VI) deserve special mention. These include arrow-heads, axes with double or single cutting-edges, chisels, nails, longitudinal ploughshares, caltrops, door-hinges, rings, knives, etc. The astonishingly large number of iron objects along with iron slag would indicate that iron industry played an important part in the economy of this culture. Also were found: copper objects like hooks and a rod; clay sealings; copper coins, possibly prepared from mould and containing symbols similar to the ones usually met with on punch-marked coins; terracotta hopscotches; terracotta human and animals figurines; beads of chalcedony, agate and carnelian; and a two-legged saddle-quern.

Although no datable find was recovered from the excavation, it is reasonable to infer that the culture may belong to the first and second centuries of the Christian era.

The excavation at Saradkel, like the one carried at Kunjla about two decades back, demonstrates that the culture represented by these so-called Asura sites was an iron-using one and did not represent in any of its phases, a stone-or copper-assemblage It flourished for a limited period in the early centuries of the Christian era and seems to have been devoid alike of genesis and decay.

16. EXCAVATON AT CHIRAND, DISTRICT SARAN.—Dr. B. S. Verma of the Depart ment of Archaeology and Museums, Government of Bihar, under the guidance of Dr. B. P. Sinha, continued (1963-64, p. 6) excavation at Chirand for the third

season. This year's excavation confirmed the results of the previous seasons, adding new dimensions to the cultural assemblage.

Nine trenches were laid out at three different places on the mound with a view to finding out the nature and the extent of the chalcolithic culture and of the monastic structure exposed last year. The cultural sequence arrived at in the earlier seasons was confirmed, remains of the chalcolithic occupation being present in the lowest levels of each trench.

In Sub-period IA, the houses were built of perishable materials like reeds or bamboos, the walls being often plastered with mud as indicated by the occurrence of thick chunks of rammed reddish earth bearing impressions of reeds and bamboos on one side. The floors of the houses were of burnt earth. Two circular ash-pits, close to a floor, yielded, besides sherds of black-and-red and associated red and black wares, bones of birds and fish in large numbers, charcoal pieces and microliths including cores and waste flakes. Three occupational levels within Sub-period IA were identified this year as well. The associated ceramics did not show any new element except that the painted pottery was absent at the lowest level. Amongst other antiquities mention may be made of: copper objects; microliths; beads of terracotta and stones; ivory; and bone arrow-heads and styluses.

Sub-period IB was marked by the use of iron objects of which many specimens were obtained. Some terracotta and stone beads were also found. An interesting find, however, was a terracotta object with punctured dots (pl. VIII C). The miscellany of other objects included ivory and bone arrow-heads, beads and styluses. No modification was noticed in the ceramic industry of this Sub-period.

Period II witnessed the emergence of the Northern Black Polished Ware. Traces of mud-walls and rammed-earth floors were located in one of the cuttings. In the upper levels of this Period were found some remains of brick structure (size of bricks: 46 X 25 X 8 cm.). A few corroded punch-marked and cast copper coins were obtained from the topmost level of this Period. Among the noteworthy finds mention may be made of: a soapstone bead having lion's head and the body of a scorpion, similar to the one found at Sonpur in the comparable period; two neolithic celts and a chisel (pl. VIII A); corroded copper coins and terracotta figurines (pl. VIII B), including an anthropomorphic vessel.

Period III showed five phases of structural remains (pl. VII). Further clearance revealed a large structure of a residential type. In one of the blocks two small interconnected rooms were found with a drain running through their floors into a square cistern outside the main building. These rooms could possibly have served either as bathrooms or as privies. The size of the bricks used was 41 X 24 X 6 cm. The finds, recovered from the deposits belonging to this Period, were of the same type as found last year. A few human and animal terracotta figurines are, however, noteworthy. Special mention may also be made of a terracotta amulet of circular shape having two parallel vertical perforations and a central figure of Surya, riding on a four-horse chariot, flanked on either side by two female attendants (pl. VIII D). The ceramic evidence remained the same as observed last year.

DELHI

17. EXCAVATION AT JAHANPANAH.—Small scale excavation across one of the bastions of the fort-wall of Jahanpanah, attributed to Muhammad bin Tughluq (A.D. 1324-51),

near its junction with the eastern wall of Qala' Rai Pithora was undertaken by Shri K.M. Srivastava and Shri M. C. Joshi of the Survey to see the nature of its construction. Students of the American International School participated in the work for a while during week-ends. The excavation revealed three stages of the construction, including additions, in the extant 6-30-m. high wall and bastion, followed by a desertion. In the first stage, a deep foundation-trench had been cut into the natural soil, and the wall had a smooth face with four offsets, each receding from the other. The wall was of ashlar-masonry with a neat face on the exterior and rubble in the core. Within the foundation the exterior was slightly rough and was built of smaller stones. After a lapse of time, the wall along with the working-level was raised, this time without any offset. The latter was heightened by the deposition of clay and *kankar* dug up from elsewhere. The last stage was represented by another working-level, higher up made of the same material as the preceding one. The wall fell into disuse thereafter, and hewn stones of the facing and rubble started falling off from their original positions.

The picture on the outer side of the fort-wall, i.e. the bastion, was slightly different, though the stages were in conformity with the inner ones. It was built up in regular tiers, each resting on a bed of concrete.

The excavation yielded fine specimens of medieval glazed ware in fragments, with designs generally in brown upon a white background A copper coin of the last Tughluq ruler, Mahmud Shah II (A.D. 1392-1412) from the last working-level was the most important find.

GOA, DAMAN AND DIU

18. EXPLORATION IN GOA.—In the course of an intensive exploration (fig.2), Shri S. A. Sali of the South-western Circle of the Survey located Early Stone Age sites at Shigao on the Dudhasagar river and collected a unifacial chopper on a pebble from a pebble conglomerate bed resting upon a laterite. The overlying deposit could not be made out as it was concealed by the talus material. On the opposite bank, however, about t-m. thick cemented sub-rounded medium gravel was noticed. At Quepem and Zambaulin on the river Kushavati, the cemented sub-rounded medium gravel, which contained a considerable proportion of shapeless lumps of quartz, was found to be capped by ochre-red clayey silt, indicating a distinct cycle of aggradation which perhaps succeeded the implementiferous pebble-conglomerate at Shigao.

Open camp-sites of the Middle Stone Age were discovered by him at Arali and Fatorpa. The former site, situated on a plateau, about 1 km. away from the sea-shore is fairly extensive. The industry, on quartz, is characterized by irregular] cores, arrow-heads, awls, points, scrapers and a few blades on short thick flakes.

Late Stone Age open-air stations were discovered at Dhargalim, Hanatiwada Mandrem, Mopa, Paliem, Parxem, Pilerne, Torxem, Tuem and Verem in Taluk Mapuca Advai, Amona, Bondal, Colovale, Comocli, Conquriem, Cunchelim, Dhamse Ganje' Honda, Keri, Khadki, Marshal, Nadora, Nanuz, Padose, Parvari, Priol Sarvona Sirsai' Vargoa, Velage and Vere in Taluk Ponda; Aglot, Bandora, Betora, Canacona' Candepa, Collem, Concern, Cumcolim, Curdi, Gaundongrem, Karmane, Khandole' Mase, Molcarnem, Molem, Sacordem, Sanguem, Sangod, Shigao, Viliena and Xeldem' in Taluk Quepem; Arali, Cotombi, Morpirla, Nagave and Nakeri, in Taluk Margao-and Bambolim, Carambolim, Colva, Dabolim, Divadi, Kurgao and Verna. The industry, chiefly on quartz and only occasionally on black chert, is characterized by fluted cores, blades and blade-flakes, lunates, awls, points, burins and scrapers. The sites of this category were often located on the hill-plateau or flat area at the base of hills.

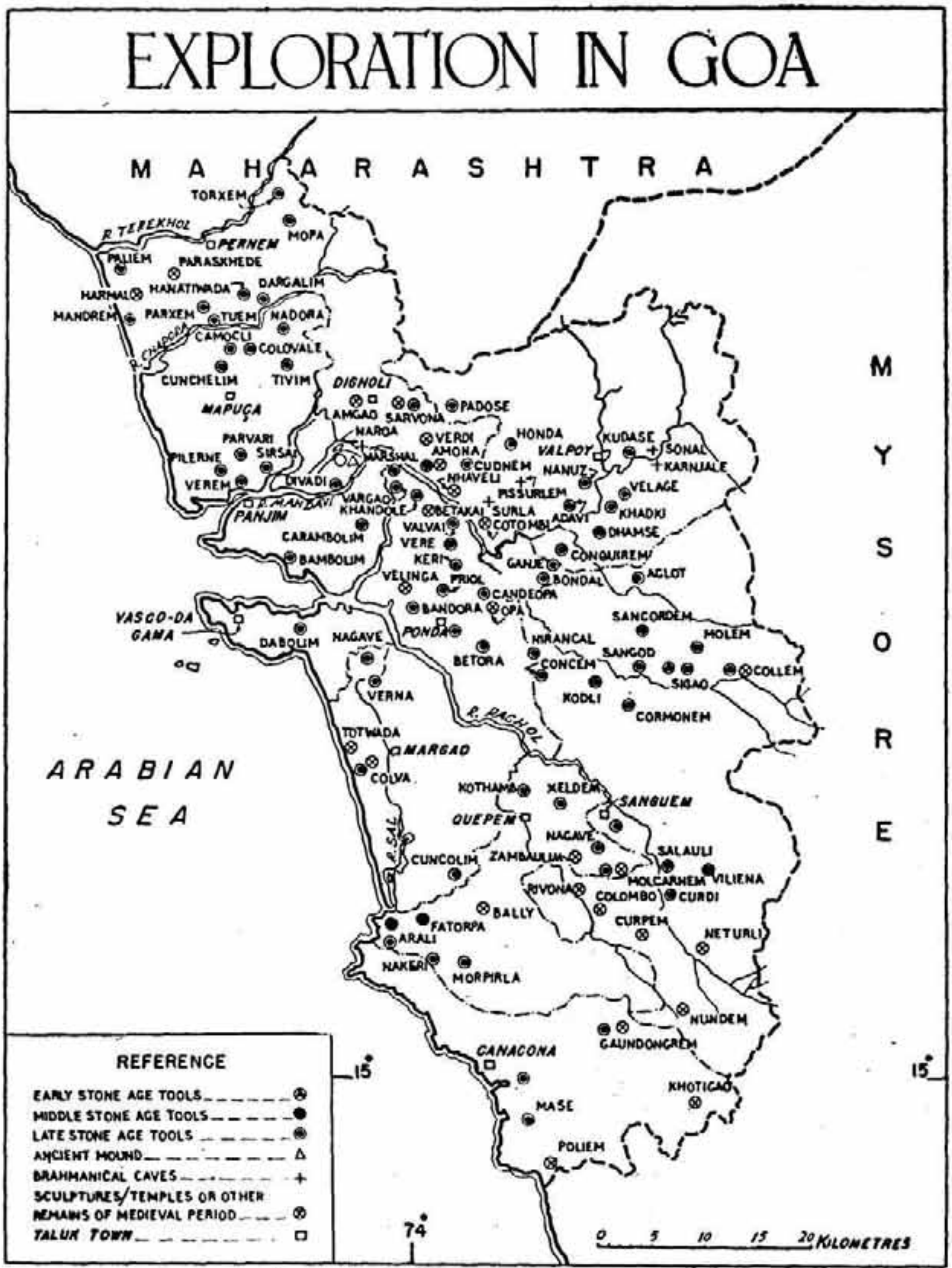

EXPLORATION IN GOA
MAHARASHTRA
MYSORE
ARABIAN SEA
TORXEM
MOPA
R. TEREKHOL
PERNEM
PALIEM
PARASKHEDE
HARMAL
HANATIWADA
DARGALIM
MANDREM
PARXEM
TUEM
NADORA
CAMOCLI
COLOVALE
CUNCHELIM
TIVIM
DIGNOLI
MAPUÇA
AMGAO
SARVONA
PADOSE
PARVARI
NAROA
VERDI
HONDA
SIRSAI
AMONA
VALPOI
KUDASE
SONAL
KARNJALE
VEREM
CUDNEM
NANUZ
DIVADI
VELAGE
MARSHAL
NHAVELI
PISSURLEM
PANJIM
VARGAO
KHANDOLE
BETAKAI
SURLA
COTOMBI
ADAVI
KHADKI
DHAMSE
VALVAI
CARAMBOLIM
VERE
CONGUIREM
BAMBOLIM
KERI
GANJE
BONDAL
AGLOT
VELINGA
PRIOL
CANDEOPA
VASCO-DA GAMA
BANDORA
OPA
SANCORDEM
DABOLIM
NAGAVE
PONDA
HIRANCAL
HOLEM
BETORA
SANGOD
CONCEM
COLLEM
SIGAO
VERNA
KODLI
CORMONEM
R. RACHOL
TOTWADA
MARGAO
COLVA
KOTHAMB
XELDEM
SANGUEM
QUEPEM
NAGAVE
R. SAL
SALAULI
CUNCOLIM
ZAMBAULIM
MOLCARNEM
VILIENA
RIVONA
COLOMBO
CURDI
BALLY
FATORPA
CURPEM
NETURLI
ARALI
NAKERI
MORPIRLA
NUNDEM
GAUNDONGREM
CANACONA
KHOTICAO
MASE
POLIEM
15°
74°
0 5 10 15 20 KILOMETRES
REFERENCE
EARLY STONE AGE TOOLS
MIDDLE STONE AGE TOOLS
LATE STONE AGE TOOLS
ANCIENT MOUND
BRAHMANICAL CAVES
SCULPTURES/TEMPLES OR OTHER REMAINS OF MEDIEVAL PERIOD
TALUK TOWN

FIG. 2

Brahmanical caves, excavated in laterite rock, were discovered at Naroa and Surla in Taluk Digholi and Karanjale, Pissurlem, and Sonal in Taluk Valpoy. The cave at Pissur-lem and Surla seem to belong to *circa* sixth-seventh century A.D. while those at Karanjale and Sonal, on the banks of the river Mahadai belong to a much later date. The cave at Naroa was found to be filled with debris belonging to a much later date.

Temple ruins and sculptures of the medieval period were located at Bally, Colombo, Colva, Comtombi, Curpem, Harmal, Khotigao, Lamgao, Molcarnem, Meturli, Naroa, Nhaveli, Nundem, Opa, Poliem, Rivona, Talavali, Totwada, Velinga and Zambaulim. The sides of the water tank at Naroa, situated near the ancient mound, are carved with miniature temples. The plinth of some of the temples at Gulli and at Karanjale were found to have been built during the medieval period, while the superstructure was constructed during the nineteenth century A.D. The well-preserved Saptakotesvara-Mahadeva temple at Opa, originally built during the medieval times, was reconstructed later on.

Besides, hero-stones of the medieval period were found at :Amona, Bally, Betakai, Collem, Lamgao, Molcarnem and Verdi and mutilated Jaina *tirthankara* images at Cotombi and Gaundongrem,

GUJARAT

19. EXPLORATION IN DISTRICTS BANAS-KANTHA, MEHSANA AND SURENDRANAGAR.—During the course of exploration in north Gujarat, Shri J. P. Joshi of the Western Circle of the Survey, assisted by Shri T.V.G. Shastri and Shri K. P. Gupta, discovered: four microlithic sites at Anguria, Barala, Ratan Tekri and Thesaria in District Banas-Kantha, with a non-geometric microlithic industry consisting of blades, burins, scrapers, points, fluted cores and arrow-heads; a late Harappan site at Vadgam, Taluk Dasada in District Surendranagar, yielding white-painted black-and-red ware along with pottery comparable to that obtained from Rangpur II C and III; a few early historical sites with a black-painted red ware akin to that obtained from Vasai and a large number of sites yielding the medieval glazed ware.

A tabulated list of the explored sites is given below: *(H=Harappa Ware; BR=black-and-red ware; PR=painted red ware, RPW=Red Polished Ware; CR=coarse red ware; R=late historical red ware; GR=grey ware and MG=medieval glazed ware.*

District	*Name of site*	*Taluk*	*Wares and other associated finds*
Banas-Kantha	Anguria	Santalpur	Microliths
99	Arjansar-no-Ghod	Radhanpur	MG; GR; CR.
99	Bakutra-I	Santalpur	PR; R
99	Bakutra-II	99	PR
99	Barala	9>	Microliths
99	Borli-no-Ghod	99	PR; MG
9,	Chandal-no-Ghod	99	PR
it	Datrana	9>	PR
99	Jhalor-no-Ghod	Radhanpur	Late red ware; sculptures and coins, beads, etc.
99	Juna-Ghod	91	PR: MG
99	Kunsela	>>	PR; MG
!»	Mahadev-no-Timbo	99	PR; R; microliths

Banas-Kantha	Manthar	Santalpur	PR; incised decorated beads of bone, carne-lian and terracotta
	Ratan-Tekri	‘’	Microliths
	Santalpur	„	PR
	Sidhada	„	PR
	Thesaria	„	R; microliths
	Vallara	Radhanpur	PR
	Varahi	Santalpur	PR; MG
Mehsana	Alora	Kalol	PR; BR
	Dharavana-no-Ghod	Sami	RPW; PR; CR; MG
	Hanuman-Timba	Harij	R; GR; RPW
	Jilia	Kalol	CR; MG
Surendranagar	Ledva-no-Ghod	Dasada	MG
	Vadgam	„	H; BR

20. EXPLORATION IN DISTRICTS BROACH, KAIRA, MEHSANA AND SURAT.—The Maharaja Sayajirao University of Baroda, under Professor R. N. Mehta, explored the area around Bhamadia and Jabugam in Taluk Valika, District Broach, and obtained stone tools, cores, scrapers and flakes from the fields. In addition, remains of iron slag and pottery of the medieval period were also obtained from the latter site. Exploration in District Kaira resulted in the discovery of a microlithic site at Mogar in Taluk Anand and a Red Polished Ware site at Tarak-Daita-no-Tekro in Taluk Cambay. In District Mehsana, crude black-and-red ware of the early centuries of the Christian era was found near the old temples on the bank of the Sabarmati river at Mahudi in Taluk Vijapur. At Kamrej, District Surat, sherds of the black-and-red ware were found, whereas Jokha in the same District yielded pottery of the chalcolithic assemblage along with fluted cores, the Northern Black Polished Ware and black-and-red ware.

21. EXCAVATION AT NAGARA, DISTRICT KAIRA.—The M.S. University of Baroda, under Professor R.N. Mehta, resumed (1963-64, p.9) excavation at Nagara. Two cuttings, measuring respectively 8x14 m. and 2x4 m., were laid out this season. The former was located on the Varai-Mata-no-Dhado and the latter on Ratankhad. In both the cuttings the natural soil consisted of black earth, capping yellow *kankary* deposit.

The cutting at Varai-Mata-no-Dhado revealed three occupational periods.

Period I *(circa* fifth century B.C. to the beginning of the Christian era) was represented by the use of the black-and-red, plain red and burnished red wares, iron and bone arrow-heads, etc. As no sherds of the Northern Black Polished Ware were found in this deposit this year, it was difficult to demarcate a period corresponding to Period II of the last year. Bone objects under various stages of manufacture were obtained throughout the occupation (pl. IX A).

Period II *(circa* first to ninth century A. D.) yielded material similar to that obtained in Period III of the last year's sequence. Brick structures and numerous hearths were met with in the deposits of this period. Besides, a mud-brick structure was also encountered. Seals and potsherds bearing Brahmi script, terracotta figurines, both human and animal, the latter representing bulls, rhinoceros, etc., and a variety of decorated conch bangles (pl. IX B), beads,dice, kohl-sticks, coins andiron objects formed the miscellany of other finds. Rice and *kodrava* were also obtained from the corresponding deposits.

Period III (A. D. fifteenth century onwards), corresponding to Period IV of the last year's sequence, was represented by the presence of the medieval glazed ware, black as well as red burnished pottery, half-round tiles, etc. A terracotta seal, no doubt out of chronological context, with an inscription in Brahmi, reading *Buddhapasya* was also obtained from this period.

The cutting on Ratankhad revealed remains of only one period corresponding to Period II above, which possibly was the most prosperous period in the occupation at Nagara.

22. EXPLORATION IN DISTRICT KUTCH.—Shri J. P Joshi, assisted by Shri T.V.G. Shastri and Shri K. P. Gupta of the Western Circle of the Survey, discovered a Harappan site at Surkotda, 3 km. north-west of village Sanva, in Taluk Rapar. Surrounded by small hillocks, the ancient mound is situated on a spur and shows an occupational deposit of 5 to 7 m., spread over an area of approximately 130x200 m. with vestiges of rubble fortification. Towards the south-western side, the mound slowly slopes down to demarcate a lower area outside the fortification.

The ceramic contents (pl. X) of this site consist of black-painted red, white-painted and plain black-and-red and plain red wares, besides coarse painted wares similar to the Vasai assemblage. The Harappan shapes in red ware are represented by the thick sturdy jar, perforated jar and convex-sided bowl. In the white-painted black-and-red ware, bowl-fragments, showing two groups of vertical strokes on the interior, were found. All these fabrics and forms are normal on the Harappan sites in Gujarat, a large majority being comparable with Rangpur II A, excepting, however, the bowl in black-and-red ware which is comparatively late and may perhaps equate with Rangpur III. A sherd bearing wavy lines is closely comparable to similar sherds obtained from Prabhas-Patan I B, Rangpur IIA and Desalpur I B. The design repertoire consisted of: horizontal bands with roundels, comparable to Rangpur II A; suspended roundels on polychrome ware; brownish horizontal lines over a cream surface; broad fish-scale in black over greenish surface; black horizontal bands and hatched rectangles.

23. EXCAVATION AT MODHERA, DISTRICT MEHSANA.—With a view to investigating the nature of the plinth of the isolated *torana* towards the north-western corner of the main temple and to ascertaining its stratigraphical position with the main temple-complex, Dr. R. Subrahmanyam, assisted by Shri T. V. G. Shastri of the Western Circle of the Survey, conducted a small-scale excavation at the Surya temple, Modhera. During the course of excavation it was found that the ornamented plinth of the *torana* (pl. XI A) joins with the plain stone revetment of the brick platform of the main temple. Stratigraphically, both were contemporaneous, being built on a made-up brick-bat platform.

24. EXCAVATION AT RANI-KI-VAV, PATAN, DISTRICT MEHSANA.—Dr. R. Subrahmanyam, assisted by Shri K. P. Gupta and Shri D. I. Kishnani of the Western Circle of the Survey, carried out a small-scale excavation to the south of the Rani-ki-Vav, completely exposing the lowest sculptured gallery having deep niches in between, (pl. XI B) The sculptures consist mainly of female figures either dancing or playing on musical instruments. Besides, the standing images of Siva and Brahma with his consort are superb examples of the plastic art of the eleventh—twelfth centuries A.D.

25. EXPLORATION IN DISTRICT RAJKOT.—The Department of Archaeology, Government of Gujarat, during the course of an exploration in the District discovered' a Harappan site at Pal. Besides, five hundred and twenty microbeads and eight bicone barrel beads of gold, belonging to a necklace, were found below a structure of Period I B at Rojdi.

JAMMU AND KASHMIR

26. EXCAVATION AT BURZAHOM, DISTRICT SRINAGAR.—The Frontier Circle of the Survey, under Shri T. N. Khazanchi, resumed (1962-63, p.9) excavation at Burzahom for the fifth season. Last year (unreported in the *Review),* apart from structures, six burials—one human and five animal—both belonging to Phase II of the neolithic occupation, were found. No features other than than those already recorded in the earlier excavated burials (1962-63, p.9) were, however, noticed, the animals represented being dog, ibex and wolf. This year's work was undertaken largely with a view to exposing more structures of the neolithic occupation.

Excavation revealed quite a number of rectangular and square pits, drains, post-holes, hearths, etc. belonging to Phase I. It appears, therefore, that apart from the already-known types of dwelling-pits, these rectangular or square pits, forming as they do some sort of a chamber, were also used for living purposes. The use of red ochre on the floors, specially in Phase II, was also attested.

Among finds, a few new types of bone and stone tools were obtained, the former comprising harvesters, gravers with curved and oblique working-edge and an awl, and the latter of celts with flat rectangular cross-section, longitudinally-bent body and straight cutting edge and bead-shaped mace-head with hour-glass section from Phase I and shoe-last type double-edge picks, perforated picks, double-edged points from Phase II.

Besides, a few copper objects were also found. These consisted of arrow-heads, a coil, a knife and a double-edged point, the first two being from Phase II and the re-maining from Phases III and IV. From Phase II were also obtained two wheel-made, black-painted red-ware pots, one of which contained nine hundred and fifty beads of carnelian and agate.

An outstanding find meriting attention, is a stone slab showing a hunting scene. The slab contains three registers. The lower register shows an antler being pierced from behind with a long spear by a hunter, and an arrow in the process of being dis-charged by another hunter from the front side. The middle and top registers show respectively a hunting dog and two suns. The slab, which formed part of a rectangular slab-structure, was found with the engraved side facing downwards.

MADHYA PRADESH

27. EXPLORATION IN DISTRICTS BILASPUR, GUNA, RAIPUR AND SEHORE.—The Department of Archaeology, Government of Madhya Pradesh, in the course of explora tions in the above Districts, found Late Stone Age tools at Dhanpur, District Bilaspur, Chanchoda, District Guna and Bhopal (T.T. Nagar and Lakshmi-Narayan Giri locality) and Kirtinagar, District Sehore and ancient temples of *circa* twelfth or thirteenth century A.D. at Chiplipara, District Raipur.

28. EXPLORATION IN DISTRICTS HOSHANGABAD, JABALPUR, MANDLA AND NARSINGHPUR.—A preliminary survey of the upper and middle course of the river Narmada between Amarkantak and Hoshangabad (fig. 3) was carried out jointly by the Archaeological Survey of India and the Deccan College Post-graduate and Research Institute, Poona.

A few Early Stone Age tools, made on basalt and chert, were found in association with the Middle and Late Stone Age tools at Dindori-Pakhri and Sondha. Middle and Late Stone Age sites were located at many places between Amarkantak and Jabalpur. Late Stone Age tools, made on chalcedonic silica, were noticed in the reddish laterite

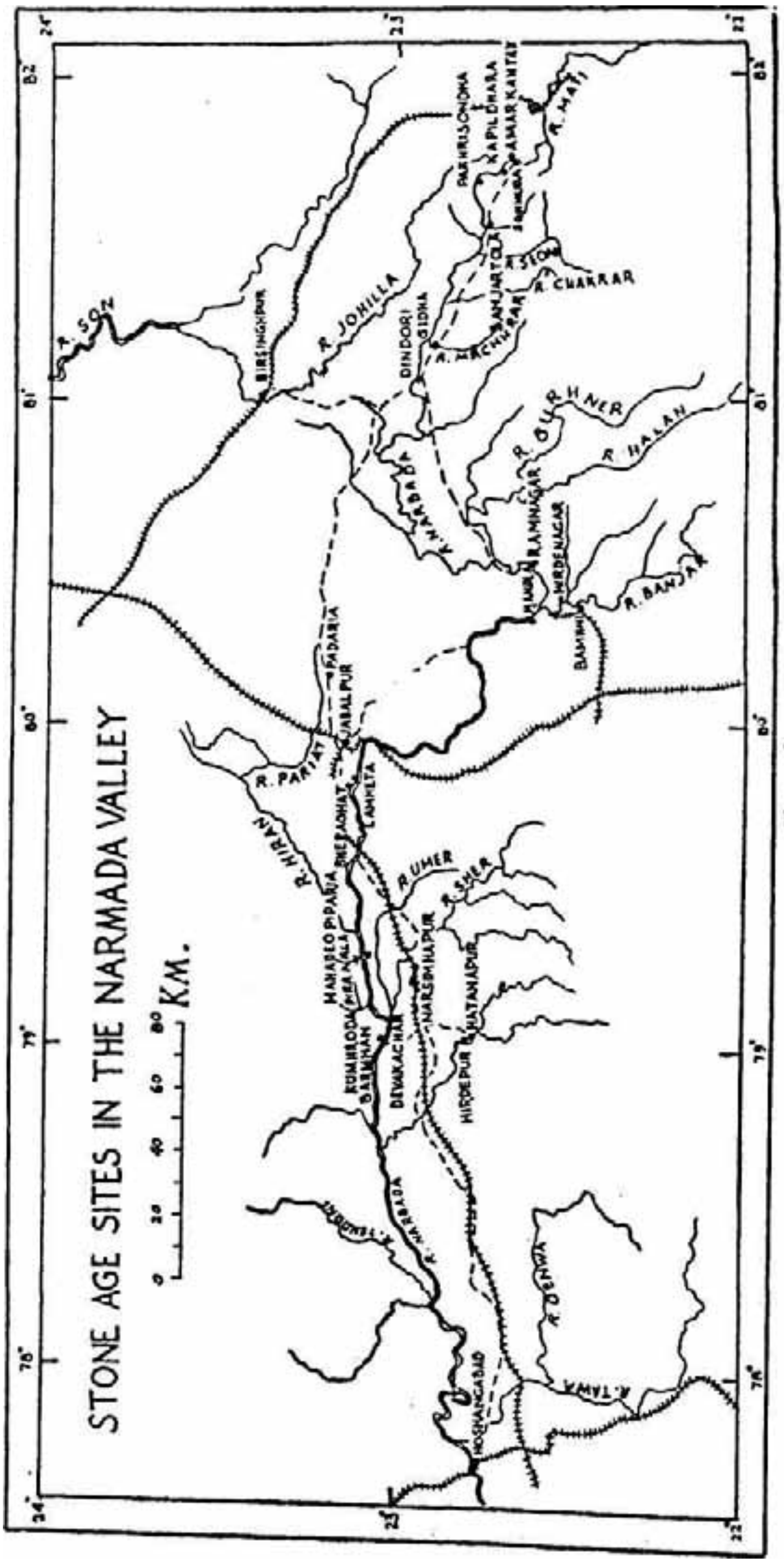

STONE AGE SITES IN THE NARMADA VALLEY
0 20 40 60 80 KM.
R. SON
BIRSINGHPUR
R. JOHILLA
DINDORI
R. CHAKRAR
KAPILDHARA
AMARKANTAK
R. HALAN
R. NARBADA
RAMNAGAR
HIRDENAGAR
R. BANJAR
PADARIA
JABALPUR
R. PARIYAT
BHERAGHAT
R. HIRAN
R. UMER
R. SHER
NARSINGHPUR
BARMHAN
DEVAKACHAR
HIRDEPUR
R. DENWA
R. TAWA
HOSHANGABAD

FIG. 3

soil on the way to Kapildhara and Sonmuda on the Amarkantak plateau. At Banjartola, Bhera-Ghat, Birsinghpur, Gidha, Lamheta-Ghat, Pakhri and Sondha (on the river Johilla), large number of Middle Stone Age tools, made mostly on crypto-crystalline silica minerals, were recovered *in situ* from the gravel deposits which were found to rest dis-conformably either on solid rock or on red-brown silt or clay. A few semi-mineralized animal bones were extracted from the Middle Stone Age tool-bearing gravels at Banjartola and Bhera-Ghat. The Middle Stone Age tool-bearing gravel showed great variations in the degree of cementation, composition, texture and structure and was found to be capped conformably by 20 to 25 m. thick sandy and silty alluvium.

The Middle and Late Stone Age factory and camping-sites were located at Bamhni, Dindori and Padaria. Locally available chert, flint and chalcedonic minerals, which occur as concretionary nodules, veins, sills and dykes in calcareous infra-and intra-trappean sediments and in basaltic flows, were exploited by Stone Age men in the upper Narmada basin.

Between Jabalpur and Hoshangabad, the Pleistocene deposits were examined at Barman, Devakachar, Hatnapur, Hirdepur, Hoshangabad, Kerpani, Kumrhoda and Mahadeo Piparia. Some of the bore-hole samples from various exploratory tube-wells were also examined at Gadarwara, Hoshangabad and Piparia. In the light of some of these preliminary studies including those of McCown relating to the exposed as well as concealed deposits of the Narmada alluvium, the following tentative conclusions can be made.

(1) The upper course of the Narmada between Amarkantak and Jabalpur seems to have been affected by the rifting in the valley as evidenced by dissected remnant lateritic high grounds between Amarkantak and Dindori and high-level gravel spreads on rock-cut terraced surfaces near Dindori.

(2) The river Narmada previously flowed along a direction further south of its present course and the upper course of the Narmada seems to have behaved as a southerly tributary to the main course in the rift-valley in the Pleistocene period.

(3) Major contribution of sediments in the rift valley was by tributaries coming from the southern Satpuras. Naturally, throughout the thickness of about 200 meters the alluvial deposits are more or less sandy, silty and clayey. The Vindhyas probably contributed coarser sediments through less well-defined drainage from the north.

(4) That there was lateritization, at least in the basaltic region is confirmed by the evidence from the tube-well boring data near Itarsi.

(5) Apart from the probably climatic changes of- the Pleistocene, the local solid geology and the morphology played a great part in the variations of the composition, texture and structure of the Narmada alluvium.

(6) The recent excavations in the so-called boulder-gravels, bearing Early Stone Age tools, carried out by Government Security Paper Mill at Hoshangabad and by Shri S. G. Supekar of the Deccan College Post-graduate and Research Institute, Poona, at Mahadeo-Piparia (below p. 16) have shown that the excavated boulder-gravel at Hoshang abad is nearly devoid of any Stone Age tools, while that of Mahadeo-Piparia is fairly rich in Early and Middle Stone Age tools. At both the places the boulder-gravel was found to be intercalated with the sandy and silty layers and was continuing down to 2 to 3 m. below the present water-level of the Narmada. The relationship of these two gravel-sections, however, could not be established. It is likely that the section exposed at Hoshangabad is composed of the earliest deposit in the valley.

From the above showing it is apparent that the stratigraphy of the Stone Age Narmada is very complicated and any generalization regarding the chronology and environments of Stone Age man in the Narmada valley is at present likely to be misleading.

29. EXCAVATION AT MAHADEO-PIPARIA, DISTRICT NARSINGHPUR.—In continuation of the earlier work (1962-63 p.11), Shri S. G. Supekar of the Deccan College Post-graduate and Research Institute, Poona, undertook fresh exacavation on the left bank of the Narmada at Mahadeo-Piparia.

The former excavation in the boulder-gravel-bed had yielded Middle Stone Age tools along with those of Early Stone Age from a depth of about 2-25 m. from the present surface. This posed a problem regarding the stratigraphical horizon of the gravels bearing Early and Middle Stone Age tools. It was also felt that the boulder-gravel itself might be a talus-deposit. The objective of the present excavation was to confirm this hypothesis.

A 3-5 square m. cutting, laid out into the red-brown silt of the cliff-section was excavated to a depth of 8-5 m. where the cemented boulder-gravel was encountered. Simultaneously, a narrow trench 1-22 m. in width was taken up in the talus-part at right angles to the trench in the cliff-section. This revealed that the cemented boulder-gravel in the cliff as well as in the talus-section was on the same level as the one exposed outside in the river bed. The boulder cemented gravel was excavated to a depth of 1.52 m. The excavation yielded Early and Middle Stone Age tools. The latter, made on crypto-crystalline silica, outnumbered the former. After the excavation the stratigraphy of the Narmada on the left bank at Mahadeo-Piparia was found to be as follows (from top downwards) : (i) light yellow brownish silt, 15 m.; (ii) cross-bedded sandy deposit with number of intercalations of very fine sand and silt yielding Middle Stone Age tools, 5 m.; (iii) disconformity; (iv) red brown silt, 3 m.; (v) a lens of boulder-gravel yielding one flake with flake-scars on the upper surface, 25 m.; (vi) yellow brown hard *kankary* silt, 1 -5 m.; (vii) yellow brown sandy silt, 1.5 m.; (viii) boulder conglomerate exposed to a depth of 1 -50 m. and appearing to continue further down yielding Middle and Late Stone Ace tools.

From the above showing it can be said that the boulder conglomerate at Mahadeo-Piparia underlies a thick deposit of yellow brown silt.

30. EXPLORATION IN DISTRICT SAGAR.—The Department of Ancient Indian History, Culture and Archaeology, University of Saugar, undertook an exploration in the Baroda' forest-area. At a distance of about 24 km. east of Sagar, along the Rehli road, seven rock-shelters were discovered on the banks of a small rivulet called Gurar-Dahar a tributary of the Sonar river. Out of these six were found to contain paintings, often in red colour but occasionally in white. These represent various hunting and fighting-scenes Noteworthy mention, however, may be made of one painted male figure wearing a long angular tunic and an elongated cap and holding a dagger in one hand and a shield in the other. The weapons shown in these paintings include bow and arrow, dagger and shield. Besides, a number of animals including elephant, bull, horse, bison, tiger and coat are also seen skilfully portrayed.

31. EXCAVATION AT ERAN, DISTRICT SAGAR.—In continuation of the previous year's work (1963-64 p. 15), the Department of Ancient Indian History Culture and Archaeology, University of Saugar, under the direction of Professor K. D Bajpai assisted by Shri U. V. Singh, resumed excavation at Eran for the fifth season.

This year's work had three main objectives to realize : firstly to ascertain whether the builders of the mud-rampart (chalcolithic period) had constructed some sort of a revetment on the eastern end to check its destruction by flood waters; secondly lo establish the stratigraphic sequence of the mud-rampart; and lastly to locate an entrance to the fortified area on the south. With these ends in view two fresh trenches, named ERN-18 and ERN-19, were taken up this year. Besides, work was also resumed at ERN-1 and ERN-16 which were partly dug in the previous years.

Cutting ERN-18 was laid out at the eastern end near the river to ascertain the position of the rampart. Being located on the lowermost slope, the height of the mud-rampart here was found to be less than at other places. To trace its eastern and northern ends, a few small trenches were added to the main cutting. Excavation revealed that the rampart, standing over the uneven natural yellow soil, did not have any revetment and was found to be overlain by the deposits of Period II B followed by those of Period IV. There seems to have been no habitation in this part of the mound during Periods I, II slight A and III. In Sub-period II B the height of the area to the north of the mud-rampart was raised by dumping occupation-debris, over which was constructed a structure of burnt bricks (size : 38 X 28 X 10 cm.). In a later period the height of the walls of the structure was raised by adding stones, five courses of which are still available. A stone-paved ramp, probably leading to the river, belonged to Period IV.

Cutting ERN-16, partly dug last year, was taken up this year to establish the stratigraphic relationship of the rampart with the habitation-area. It was revealed that the fortification-wall was constructed in the middle phase of the chalcolithic period and not in the late phase as reported earlier. Two layers of the chalcolithic occupation were found underlying the rampart. Here again, as in ERN-7 Ext., two structural phases of the rampart were observed. Save for a few patches of rammed mud floors with traces of burning and two sets of hearths (pl. XII A), ascribable to the late phase, no regular plan of the houses could be obtained within the chalcolithic occupation. The cutting also revealed small deposits of Sub-periods II A and II B, besides two ring-wells belonging to an early phase of Period III.

At ERN-19, two small trenches, each measuring 2.50 m. square, were laid to locate the entrance. No remains of the mud-rampart were met with here; instead, the layers, consisting mostly of washed deposits of the earlier Periods, were found running in a southward slope. It can reasonably be presumed, therefore, that an opening in the mud-rampart existed here and it has continued to be used up to the present times.

At ERN-1, two more trenches, each measuring 6 m. square, were taken up. Excavation revealed remains only of Periods II B and III. Two ring-wells, associated with some structural activity of Sub-period II B, and a stone wall of Period III were uncovered here.

This year's excavation, besides confirming the already-known sequence, brought to light some interesting finds relating to the protohistoric and the historical periods, the more important of which are described below.

For Period I, the evidence of neolithic association was further confirmed by the occurrence of two more pieces of neolithic celts (pl. XIII A), one from a lower level of the mud-rampart and the other from the habitation, bringing the total number of such implements recovered so far to four. The other finds of the Period included : microliths (pl. XII B); beads of terracotta, stone, steatite, shell and paste (pl. XIII B); terracotta animal figurines; and the characteristic pottery.

From Sub-period II A, besides the black-and-red ware and other associated wares, a terracotta female figurine, a terracotta animal figurine and a copper object are worth

mentioning. From Sub-period II B, beads of various materials (pl. XIII B); terracotta objects like toy cart-wheels, balls; bone objects including pins, arrow-heads and a dagger; and bangles, pendants and rings of shell are noteworthy.

Belonging to Period III were : several clay coin-moulds of the western Kshatrapa rulers, the four identifiable of whom were Vijayasena, Rudrasena II, Visvasimha and Rudrasimha; a circular clay sealing of a hitherto-unknown Kshatrapa ruler bearing the legend *rajno Isvaramitra-puttasya rajno Simhasenasya* and another circular clay scaling bearing an inscription in the script of the fourth century A.D. reading *Dravakasya;* beads of terracotta, crystal, shell and glass; terracotta human figurines, sometimes with elaborate head-dresses; terracotta animal figurines, including a figure of a cow with four udders; rectangular bone-dice marked on four sides, the number being indicated by incised circle around a dot; miscellaneous objects of iron; and bangles and two models of a frog in shell.

From the deposits of Period IV objects of iron, terracotta and stone and numerous bangles of lac and glass were recovered.

32. EXCAVATION AT UJJAIN.—A small-scale excavation at Ujjain was undertaken by Shri K. M. Srivastava of the Survey, primarily to collect Carbon-14 material with a view to dating the different cultural periods. An interesting find was a small structure of disintegrated limestone consisting of a small basin (50 X 50 X 40 cm.) provided with pipes, in Period II, which had other structures as well (pl. XIV A) and was also characterized by the Northern Black Polished Ware. The walls of the basin were about 3 cm. thick. As the structure was damaged by a foundation-trench of a later ring-well (pl. XIV B), a clear picture of its purpose could not be obtained.

33. EXCAVATION *HEAR.* CHAUBIS-KHAMBA GATE, UJJAIN.—The Department of Archaeology, Government of Madhya Pradesh, during the course of a clearance excavation necessitated by the road-making operations of the Town Improvement Trust, exposed remains of a temple belonging to *circa* A.D. 1100, partly utilized for the construction of a small mosque at the site in about the middle of the fifteenth century. The latter monument had itself collapsed not long after and was in ruins.

34. EXCAVATION AT KAYATHA, DISTRICT UJJAIN.—Shri V. S. Wakankar, working on behalf of the Vikram University, Ujjain, undertook a small-scale excavation at Kayatha, situated on the banks of Choti-Kali-Sindh river, 24-14 km. east of Ujjain on the Ujjain-Maksi road. The site is believed to have been the birth-place of the astronomer Varahamihira. Excavation revealed a five-fold sequence extending from an antecedent stage of the central Indian chalcolithic culture through the Northern Black Polished Ware and Sunga phases to the Gupta period.

Period I, the deposits of which started right on the black cotton soil, showed two phases of cultural development. The earlier of them was distinguished by the use of a wheel-made, well-fired sturdy ware, often dressed with dark-brown, cream, mauve-purple or dull-red slip and bearing painted designs. The later phase witnessed the introduction of the white-painted black-and-red ware of the Ahar fabric; the dull-red ware of the preceding phase, however, continued side by side, though in diminishing quantities. The use of copper and the microlithic blades including lunates and triangles was also attested. Noteworthy finds from these phases included terracotta bulls showing prominent hump and horns but without any head, ears or legs. Some of these were also found decorated with serpentine lines and. crescentic marks.

Period II was represented by the assemblage of the central Indian chalcolithic culture exemplified by the black-painted red and other associated wares. Remains of houses

showing all-round burning were also exposed. While the floors of the houses were generally made of burnt lumps of clay and lime, the walls seemed to have been built of bamboos, plastered over with mud. Other finds belonging to this Period comprised stone-balls or hammerstones, querns, pestles and microlithic blades.

Period III, which seemed to have followed not long after, was marked by the use of iron and the Northern Black Polished Ware. Iron objects, copper ear-ornaments, ivory figures of mother goddesses, beads, variously of chalcedony, agate and jasper, and terracotta figurines formed the miscellany of other finds.

Period IV was characterized by the typical Sunga terracottas and cast copper coins, bearing *svastika* on one side and *chakra* or human figure on the other.

Period V was evidenced by the remains of a baked-brick house, possibly a kitchen with a hearth and the find of a figure of Buddha in Gupta style. Besides, a pestle and a quern were also obtained from the strata of this Period.

The site may have remained under occupation till the Muslim invasion as testified by the occurrence of two copper coins of Muhammad Shah in the upper layers.

35. EXCAVATION AT BESNAGAR, DISTRICT VIDISHA.—In continuation of the previous year's (1963-64, p. 16) work, Shri M. D. Khare of the Central Circle of the Survey resumed excavation in cuttings BSN-1, BSN-3, and BSN-4. The objectives of the present season's work, however, were three-fold : (i) to ascertain the nature and extent of the chalco-lithic deposit, already revealed by surface-indications; (ii) to lay bare the plan of the temple adjacent to the Heliodoros pillar; and (iii) to find out the extent of the massive wall exposed last year in cutting BSN-1. With the discovery of the chalcolithic deposits in cuttings BSN-1 and BSN-4, the incidence of the cultures at Besnagar is now complete.

The chalcolithic phase (Period I) is characterized by the use of black-painted red and black-and-red wares, short microlithic blades, mostly on crystalline quartz and a terracotta bead with incised decoration. A few sherds of grey ware, two of them belonging undoubtedly to the well-known Painted Grey Ware, came from the upper levels of the deposit, thereby suggesting contemporaneity, at least in that region, of the early phase of the Painted Grey Ware with the later phase of the chalcolithic culture.

Of the structural remains exposed this season, the following are noteworthy:

In the cutting BSN-1, the massive wall excavated last year was further exposed towards the north and the south to a length of 63 m. and to an average width of 3.75 m. Originally built of dry rubble-masonry, it was provided with passages and drains and was twice rebuilt in brick with supporting buttresses. More than half a dozen large-sized stone-balls, recovered from either side of the wall and used perhaps as sling-stones, may perhaps indicate its function also as some sort of a defence-wall, besides an enclosure-wall of a palace-complex. Two ring-wells (pl. XV), of which one has already been reported last year, were encountered in the strata of Period III (the Northern Black Polished Ware phase). Of the finds obtained from this cutting, a number of punch-marked and Kshatrapa coins from the Maurya, Sunga and Kshatrapa deposits and a fragmentary terracotta image housed in a shrine, ascribable to the Gupta period (Period VI) are noteworthy.

At BSN-3, the discovery of the plan of a temple (pl. XVI A), represented by two rows of grooves in an elliptical outline with a passage in between serving as the *prada-kshina-potha,* is an important landmark in the history of Indian architecture. A detailed study of the plan of the grooves and the post-holes, besides iron nails and rings, would show that the superstructure of the temple must have been made largely of timber. The

outer groove was found to project forward to form an *antarala* in front of the *garbhagriha* facing east. This temple was destroyed some time by the close of the third century B.C. Two small sherds of the N.B.P. Ware and six punch-marked coins were recovered from the floor of this complex which, however, did not yield any cult-object.

In the next phase, the temple was marked by a brick platform on a raised plinth, retained by free-built rubble-walls, the core being made up of clay filling (pl. XVI B). Remains of some brick-built structures, contemporary with the retaining-wall, were also exposed. Stratigraphically, the Heliodoros pillar standing nearby and a portion of the stone railing, exposed in an earlier excavation by D. R. Bhandarkar, belonged to this phase. The retaining-walls on all the sides lean outwards, as a result, perhaps, of a thrust from inside due to water-stagnation.

At BSN-4, two trial-trenches excavated this year revealed, besides a large quantity of chalcolithic pottery, a small baked-brick structure belonging to Period III, perhaps a furnace with plenty of charred wheat, charcoal, burnt copper objects and pottery. It confirms the occurrence of a large-scale conflagration postulated last year in BSN-1. The Sunga period (Period IV) was represented by a 18-cm. thick floor composed of successive layers of pebbles, brick-bats and lime-plaster. From the deposits of Period V, only a Kshatrapa coin was recovered.

MADRAS

36. EXPLORATION IN DISTRICT CHINGLEPUT.—Dr. K. D. Banerjee and Shri M. V. N. Krishna Rao of the Prehistory Branch of the Survey, during the course of an exploration in the District, found Early and Late Stone Age sites at Parandur and Vadiyur in Taluk Kancheepuram and at Arambakkam, Krishnapuram and Rangapuram in Taluk Tiruvallur.

The Department of Ancient History and Archaeology, University of Madras, while exploring Muvendarpettai, a small village in Taluk Saidapet, 3-21 km. south-east of St. Thomas Mount railway-station, discovered a dilapidated Siva temple of the Chola period. An inscription of the twelfth regnal year of Ko-Raja Kesarivarman, found on the basement of the *garbhagriha* of the temple, mentions the place as Talaikkunrattuchcheri in Suratturnadu of *Puliyur-kottam.* The modern village to the east of this temple is now called Talakkanancheri. The inscription also records a grant of tax-free land to the temple drummers for playing drums in the temple in the mornings *(tirupalli-eluchchik-kottu).* West of this temple was found another ruined shrine dedicated to the *Sapta-matrikas.*

37. EXCAVATION AT ATTIRAMBAKKAM, DISTRICT CHINGLEPUT.—The Prehistory Branch of the Survey, under Dr. K. D. Banerjee, assisted by Shri M. V. N. Krishna Rao, conducted excavation at the famous site of Attirambakkam. This work forms a part of the continued plan of ascertaining the position of the Stone Age industries in relation to the laterite deposits in Madras State.

Four trenches were laid out, 1 km. away from Attirambakkam, along the right bank of the Budida-Manu-Vanka on the high cliffs of approximately 50-m. contour. The excavation revealed the following stratigraphy, from bottom upwards (fig. 4).

(1) Sriperumbudur shale, the top part of which is clayey. In this deposit are embedded Acheulian tools including handaxes and cleavers. Whether the horizon of this industry was simply on the surface of the shale or in an overlying deposit, which has subsequently been washed away, remains to be established by further work. The tools, being thoroughly encased in clay, have retained their freshness to a surprising degree.

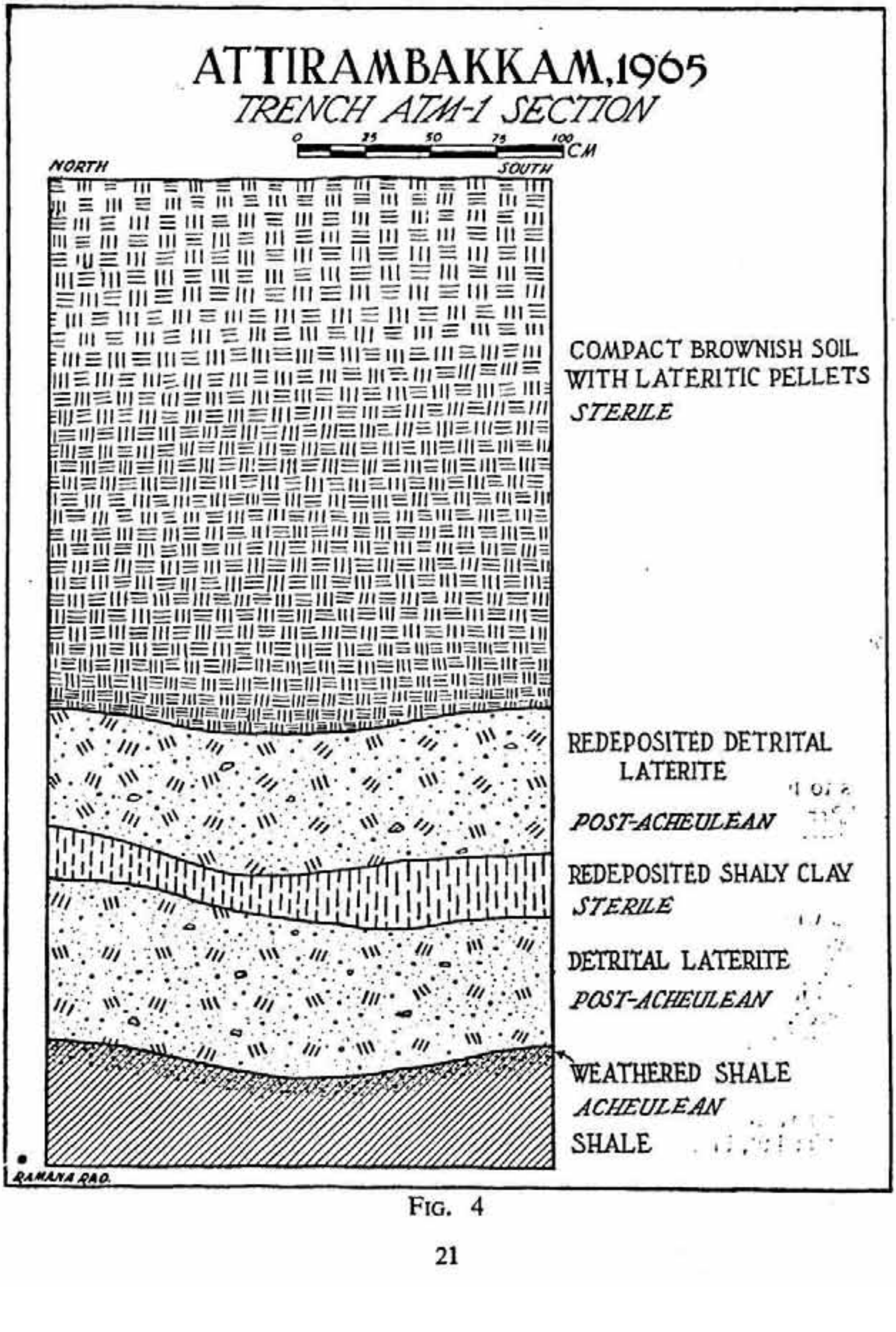

ATTIRAMBAKKAM, 1965
TRENCH ATM-1 SECTION
0 25 50 75 100 CM
NORTH
SOUTH
COMPACT BROWNISH SOIL WITH LATERITIC PELLETS
STERILE
REDEPOSITED DETRITAL LATERITE
POST-ACHEULEAN
REDEPOSITED SHALY CLAY
STERILE
DETRITAL LATERITE
POST-ACHEULEAN
WEATHERED SHALE
ACHEULEAN
SHALE
RAMANA RAO.

FIG. 4

(2) The detrital laterite gravel containing the post-Acheulian flake-industry. This deposit yielded characteristic tools like points, scrapers and longish flake-blades.

(3) Brownish silt covering the laterite, being sterile. Occasional washed away materials of the underlying deposit can be seen.

(4) Top surface, yielding microliths.

This excavation has *inter alia* demonstrated that the current view about the lateritic gravel (?) being the Acheulian horizon is altogether incorrect. Similarly, the silt is not the horizon of the post-Acheulian flake-industry as was formerly thought.

38. EXPLORATION IN DISTRICT NORTH ARCOT.—Dr. K. D. Banerjee and Shri M. V. N. Krishna Rao of the Prehistory Branch of the Survey discovered several Early Stone Age sites in the District, the more important of which being the gravel-deposits at Kilvenpakkam and Tirumalpur in Taluk Arkonam. Many Early Stone Age implements were also collected near Ambarishapuram, Arkonam and Takkolam hamlets.

39. EXPLORATION IN DISTRICTS NORTH ARCOT AND SALEM.—Shri B. Narasimaiah of the Southern Circle of the Survey discovered a megalithic habitation-site at the foot of a hill near Kottur and a burial-site at Pachur in Taluk Tirupattur of District North Arcot. He also located sites yielding neolithic celts, burnished grey ware and megalithic Black-and-red Ware at Boganapalli and Gollapalli in Taluk Krishnagiri of District Salem. Megalithic cists were found at Chinnakottur, Dinnakottur, Gengaleri, Jeyannaur, Nerelagiri, Oblesapalli and Tippanapalli in the same Taluk.

40. EXCAVATION AT PAIYAMPALLI, DISTRICT NORTH ARCOT.—Shri S. R. Rao of the Southern Circle of the Survey undertook an excavation at Paiyampalli with a view to determining the extent of the time-lag, if any, between the end of the neolithic occupation and the beginning of the megalithic settlement.

In all, four trenches were laid, two in the middle terrace and one each in the upper and lower terraces. Except for a thin deposit of superficial occupation by the neolithic folk, the cutting in the upper terrace at the foot of a large rock-shelter did not yield any substantial evidence. However, a pit 1 X 1.5 m. in size, cut into the bed-rock, yielded the megalithic Black-and-red Ware in considerable quantity. From the contents, the pit appears to have been used for storage purposes.

After excavation, it was found that the total habitation-deposit in the lower and middle terraces varied from 1.5 to 2.5 m. Two cultural periods, viz. the neolithic (Period I) and the megalithic (Period II) were recognized.

Period I was represented by a 1-m. thick deposit yielding ground stone implements like axes with a pointed or truncated butt, stone pounders and polishers, a stone chisel and a hoe; terracotta beads (pl. XVII A); a terracotta figurine of long-horned variety of cattle (pl. XVII A); and hand-made grey ware, occasionally burnished and painted on the rim with red ochre. An orange-to-pink shade in surface-colour was also observed on some sherds. The recurrent shapes in pottery included : the lipped bowl; vessel with a flaring mouth; and storage-jar and dough-plate, made of a thick gritty red ware. Except for a fluted core and an asymmetric flake, both of jasper, there was no evidence of any blade-industry, nor was there any trace of the use of metal.

For structural evidence, post-holes in a rammed gravel-floor suggest the existence of a circular hut, built of perishable material.

In one of the trenches on the middle terrace, the top level of the neolithic culture was found to overlap with the early level of the megalithic, as evidenced by the co-occur-

rence of the burnished grey ware and the megalithic Black-and-red Ware along with ground stone axes. This phenomenon was sufficiently illustrative of the intermixture of two cultures.

Period II was distinguished by the megalithic culture and was represented by 1.5 to 2-m. thick deposit comprising four successive floors, three of which were made up of lime or *chunam* and the fourth of red earth. The occurrence of post-holes and rubble-footings indicated that the houses were either circular or rectangular in plan. Remains of an oven and storage-jars in *situ* were found on one of the floors.

Among finds mention may be made of iron objects such as knives, sickles and nails, terracotta figurines of birds and animals, bangles of opaque glass and shell and beads of semi-precious stones, including the etched variety. Ground stone axes continued in use during this Period as well. From the large quantity of iron slag and ore, strewn all over the site, it can be inferred that the inhabitants smelted iron at the site itself. The ceramic industries of the Period consisted of the Black-and-red Ware and the red and pink wares, including a coarse red variety. In the late levels, however, the Russet-coated Painted Ware also made its appearance. Charred grains, recovered from a large pit belonging to this Period, indicate the use of gram *(khulti),* green gram and the cereals resembling *ragi,* all of which are locally grown even now.

At the foot of the hill and in the valley below, several stone-circles were located.

The present excavation, though limited in scale, established : (a) the absence of metal in the neolithic levels and (b) the overlap between the neolithic and the megalithic cultures.

41. EXPLORATION IN DISTRICT THANJAVUR.—The Department of Ancient History and Archaeology, University of Madras, during the course of an intensive exploration in the District, located several early historical sites.

At Akkadu and Rajendram, two adjoining villages lying about 6.43 km. northwest of Thanjavur on the Thanjavur-Tiruvaiyaru road, were found sherds of the megalithic Black-and-red Ware, all-black and coarse red-slipped wares. A few broken pieces of urns were also found in a field near the Siva temple in Rajendram. These two villages are important as the region in which they are situated is called 'Arkattukkurram' in the inscriptions of the ninth century A.D. The village Akkadu may itself be identified as the second capital of the early Cholas and 'Arkatos' of Ptolemy.

At Akkur, about 14 48 km. east of the Mayavaram town, sherds of the megalithic Black-and-red Ware and all-black ware were collected from the open fields about 180 m. north of the bus-stand. In the south-eastern corner of this field, a brick structure, apparently the foundation of a temple, was also located.

At Ayirattali, about 6 43 km. west of Tirukkattuppalli, were found the ruins of a temple, of which only traces of the basement of the sanctum with the *linga* remain now. A few smaller *lingas* were found scattered in the field nearby.

At Kilvelur, 16 09 km. on the Nagappattinam-Tiruvarur road, were found sherds of the megalithic Black-and-red Ware and a crude unslipped red ware in a field of a local secondary school. At Buddhamangalam, a small hamlet 80 km. north of the Kilvelur temple, was found a stone sculpture in three pieces showing a seated Buddha in the *dhyana* pose. The sculpture may, stylistically, be dated to Chola period *(circa* tenth-eleventh century A.D.). A Chola coin was also found on the surface in a neighbouring field.

At Nagatti, about 4 82 km. north-west of Thanjavur town, on the right bank of the Vettar river, sherds of the megalithic Black-and-red Ware, all-black and coarse red wares,

bangle pieces and beads of glass, were found on the surface of a mound locally called Bajamedu. In a small dilapidated temple of Bhairava near the site was found a Mutta- raiyar inscription m Tamil characters of the ninth century A.D., inscribed on a face of the lintel of the *garbhagriha.* Inside the sanctum was noticed a large image in stone of Bhairava with a rare feature of a woman to the left and a dog to the right.

AtSikkal9-65km.westof Nagappattinam, fine sherds of the megalithic Black-and-red Ware and a few urn-pieces were found on the surface. A **trial-pit,** due in the field between the recently-built Tourist House and the local temple, revealed a habitation-deposit, about 1.82 m thick, essentially characterized by fine megalithic Black-and-red Ware in the lower levels and a crude red ware in the upper ones A stone sculpture of a seated Vishnu in the Pallava style was found lying on the roadside

At Solamaligai, about 4.82 km. south-east of Kumbakonam town, a remarkable stratigraphical sequence of cultural deposit, ranging from the megalithic to the la e medieval period was observed in the sections of a recently-dug well: In a field about 91 -44 m. west of this well, was noticed a ring-well, 1.06 m. in diameter

In a temple dedicated to Kali, locally known as Virakaliamman temple, about 1.60 km. to the east of the place in Thanjavur town, was found a loose sculpture of Nisumbha-sudam in the early Chola style. The location of the Nisumbhasudani temple which was constructed by Vijayalaya at Thanjavur in the middle of the ninth century still remains unknown. It is highly probable that the original Chola temple had fallen in ruins and must have stood in the vicinity of the present temple.

At Tillaiyadi, 1 -60 km. south of Tirukkadaiyur railway-station on the Mayavaram-Tranquebar section of the Southern Railway, were also found scattered remains of broken urns and a few sherds of the megalithic Black-and-red Ware.

At Tirumalairayanpatnam, about 11 26 km. north of Nagappattinam on the Naga-ppattinam-Karaikkal road, sherds of crude Black-and-red Ware were found on the St bank of the backwater canal. A few sherds of Black-and-red Ware were p eked up also in a grove near the shore.

At Vallam, 9.65km. south of Thanjavur on the Thanjavur-Pudukkottai road were found the ruins of an ancient fort with earthen fortifications and a deep moat probablv belonging to the medieval period Inside the fort were noticed pottery of the comparable period In a field about 1.60 km. south of this fort, were found some broken pieces of urns and a few sherds of the megalithic Black-and-red Ware.

42. EXCAVATION AT KAVERIPATTINAM, DISTRICT THANJAVUR.- Shri S.R. Rao of the Southern Circle of the Survey, assisted by Shri K.V. Raman, resumed (1963-64, p.20) excavation at Kaveripattinam. An outstanding discovery towards the close of the last year's work was a Buddhist *vihara* (pl. XVIII) consisting of five square rooms and a common verandah laid bare in a locality known as Pallavaneswaram. The cells are 3.5 m. square, laid in the south-east to north-west direction. The walls, built of large-sized bricks (42 X 24 X 10 cm.), are about 1.7m. thick. One of the subsidiary structures, partially exposed, has a number of offsets as in an apsidal chaitya. The walls were originally decorated with moulded bricks and stucco ornamentation. Traces of a few layers of paintings have also been noticed on the stucco pieces recovered in the excavation. A small bronze figurine of the Buddha in *dhyana* pose and a broken terracotta figurine of a goddess were found in one of the cells. In a subsidiary structure, of probably a later phase, a slab of limestone, bearing the Buddha-pada and sacred symbols such as the purnaghata, svastika and srivatsa (pl.XVII B), was found in a disturbed condition. The material used and the decorative style show an unmistakable affinity with the Buddhist art of the

Andhra country as seen at Amaravati and Nagarjunakonda. In an adjacent porch on the same level a beautiful stucco-head was found in the debris. The available evidence suggests that the main building belonged to the fourth-fifth century A.D. with reconstructions made in a later phase.

The discovery of a Buddhist monastery confirms the literary evidence, found in the Tamil epics such as the *Silappadikaram* and *Manimekhalai,* which mention that Kaveri-pattinam was an important centre of Buddhist faith.

Other antiquities from the site included square copper coins of the early Cholas, the Rouletted Ware, and the Megalithic Black-and-red Ware, all assignable to the first four centuries of the Christian era. The terracotta figurines, however, belong to the early medieval period.

43. EXCAVATION AT URAIYUR, DISTRICT TIRUCHCHIRAPPALLI.—The Department of Ancient History and Archaeology, University of Madras, undertook excavation at Uraiyur, the ancient Chola capital and now a division of the Tiruchchirappalli Municipality. Two sites—one in the playground belonging to the Bishop Heber High School, Puttur and the other in the open ground in front of the temple of Selli-Amman were selected for excavation. In all, four trenches were excavated, of which three, URY-1, URY-2 and URY-3, were laid at the former site, and the fourth, URY-4, at the latter. Excavation revealed a 3 to 365 m. thick deposit belonging to three broad cultural periods.

Period I *(circa* third-second century B.C. to first-second century A.D.) was characterized by the predominant use of the megalithic Black-and-red, Russet-coated Painted, Rouletted (pl. XIX) and Arretine Wares, besides the associated red and all-black wares. The recurrent shapes in these wares included : bowls with or without carination at the shoulder and rounded body; flat dishes with straight or incurved rims, some with sagger base; vases and jars with straight necks; and a few ring-stands. Some potsherds bearing Tamil inscriptions in the Brahmi script, assignable to the first-second century A.D., were also found. The script of the inscriptions resembles that found on the potsherds from Arikamedu. One of the inscriptions on a broken pot reads : *Mu(p) ponpedu Andan ninru man (dan* ?), meaning 'Andan of Mupponpedu died (?) standing', *i.e.* fighting in a battle-field. The dedication reminds one of the *viragals* of a later period in the Tamil and Karnatak area. Besides, some of the pottery bore post-firing graffiti showing symbols of the sun, moon, fish, trident, pentagonal star, square, arrow and zig-zag lines.

Period II *(circa* second century A.D. to the fifth-sixth century A.D.) was marked by a gradual disuse of the Black-and-red Ware and other associated wares of Period I and the emergence of the red-slipped ware. Common shapes in this ware included globular pots with straight or concave neck, cooking pots, bowls with tapering sides and incurved rims and dishes.

A small baked-brick structure consisting of two adjoining cisterns, measuring respectively 68 cm. square and 35 x88 cm., were exposed in cutting URY-4 (pl. XX A). The bottom of the rectangular cistern was at a lower level than that of the other. The real purpose of these brick structures cannot be definitely determined, though it may be suggested that they had some industrial use, perhaps as dyeing-vats.

Cutting URY-4 also presents evidence of floods and water-logging, whereby the occupation of Period II came to an end. This happened some time in the fifth century A.D. and is represented by a thick deposit of clay and sand.

Period III was distinguished by the abundant use of crude ill-fired red ware with an unslipped surface, represented by carinated cooking-pots, vases, big jars with

globular bodies, bowls and dishes. Notable among the structural remains of this Period were two rammed-clay floors in URY-2. Associated with these was a large stone block with a cup-like depression on one of its faces which probably served as a door-socket. Another complex, exposed in URY-4, consisted of twenty-one post-holes, some of them round and others square or rectangular in shape (pl. XX B); the purpose for which these post-holes were used being not clear.

MAHARASHTRA

44. EXPLORATION IN DISTRICT CHANDA.—In continuation of his previous year's work (1963-64, p.22) Shri L. K. Srinivasan of the South-eastern Circle of the Survey dis covered Middle Stone Age tools at Lonhar in Tahsil Warora. The tools, made on fine grained quartzite, do not seem to be much rolled, and comprise scrapers, blades and points.

45. EXPLORATION IN DISTRICT DHULIA.—Shri S.A. Sali of the South-western Circle of the Survey found in the course of his exploration in the District: (1) a crude handaxe on fine-grained red basalt from a highly consolidated gravel of the Panjhara at Datarti; (2) Middle Stone Age tools at Chhavdi, Hordana, Isarda, Kandhra, Khori, Lonkheda, Mhasala, Panhali Pada, Phopada, Shovali, Titana and Vasmar; artifacts, including irregular and fluted cores, blades and blade-flakes, awls, scrapers and flakes, on jasper and agate, ascribable to a stage succeeding the Middle Stone Age but preceding the Late Stone Age, at Balsana, Datarti, Hatti Khurd, Indva, Khudana, Satmana, Vajdara and Vaskhedi; and Late Stone Age tools at Akalpada, Dusana, Lonkhed, Sipli-Pada and Varsu.

From the yellow silt, exposed in a foundation-trench of a building under construction at Dhulia, was recovered one animal fossil-bone. A few lithic artifacts on silicious rock-material were collected from the debris of a recently-dug well in the same plot.

Chalcolithic habitation-sites were discovered at Balsana, Dusana Kandhra Runmali, Saidnagar, Satmana and Vehergaon. At Balsana, the mound is capped by a lime-like deposit closely resembling what forms an embankment at Daimabad on the Pravara, while an almost similar deposit, about 1-m. thick was seen at Kandhra along the eastern periphery of the site. Chalcolithic burial-sites were discovered at: Akalpada Balsana, Lonkheda, Rojgaon and Tamasvadi.

Ruins of temples, step-well, hero-stones and sculptures, ascribable to *circa* thirteenth-fourteenth century, were discovered at Chhavdi, Dusana, Hordana, Indva Kandhra Vadel and Vehergaon.

Remains of fortifications and other structures, assignable to the Mughal-Maratha times, were noticed at Domkani, Dusana, Mordana and Vehergaon.

46. EXPLORATION IN DISTRICTS NANDER, PARBHANI AND YEOTMAL —Shri S N Raghunath of the Prehistory Branch of the Survey explored the Penganga basin and obtained Middle Stone Age implements from Bhategaon-Talav, Bitergaon Katharwadi Mahagaon, Hanjali, Nander, Umarkhed and Waranga.

47. EXCAVATION AT SONGAON, DISTRICT POONA.—Drs. S. B. Deo M S Mate and G. G. Mujumdar of the Department of Archaeology, Deccan College Post-graduate and Research Institute, Poona, under the general direction of Professor H. D Sankalia conducted excavation at Songaon in collaboration with the Department of Archaeology

Government of Maharashtra. The ancient site represented by a 5 18-m. high mound (pl. XXI A) lies on the confluence of the rivers Karha and Nira, 14484 km. south east of Poona and was first brought to notice by Shri Inamdar of the State Department. The excavation brought to light two occupational periods, the earlier of which was chalcolithic in cultural content and the later early historical.

Period I was characterized by the preponderence of the Jorwe Ware and the burnished grey ware with a sprinkling of the Malwa Ware. However, on the basis of habitational peculiarities, three structural phases were recognized within this deposit. The habitation of Sub-period I A started right on the black cotton soil, and was distinguished by lime-floorings with post-holes and circular pits with diameters ranging between 1 -21 and .75 m. (pls. XXI B and XXII A). The pits contained some ash and a lot of burnt earth. There was, however, no indication of plastering of the sides, as available at Nevasa. The exact purpose of these pits could not be ascertained.

Sub-period IB was characterized by floorings of lime as well as of rammed brown clay. Though post-holes were present in such floorings, they failed to indicate any plan of the house. The cultural milieu including ceramic content remained the same as in Sub-period I A, with the difference, however, that urn-burials of children, as at Nevasa and Chandoli, several stone querns and ground stone tools (pls. XXII B and C) were also included in the assemblage of this Sub-period.

Sub-period IC was distinguished by the remains of an extensive house, covering an area measuring 1066 X 6.09 m., littered with burnt clods of clay plastered over half-cut bamboo-poles, arranged horizontally and vertically like a screen (pl. XXII D). Notable finds associated with this structure included: charred wheat, known for the first time in the post-Harappan Deccan chalcolithic assemblage; terracotta lamps as at Nevasa; and a kind of rectangular or a square bowl on a hollow flared stem (fig. 5,1; pl. XXII E). Similar bowls-on-stand are also reported from Chandoli.

In any of these Sub-periods the pottery did not reveal any change in shapes; the Jorwe Ware, bearing mostly geometrical designs as also a few motifs like a crane and an antelope, (fig. 5, 2 and 3), was represented by the spouted pots, globular vessels and carinated bowls, the Malwa Ware was represented by globular pots with flared mouth and sub-spherical bowls; the grey ware was typified by burial-urns, knobbed lids, *kundas* and perforated pots with a lot of lime inside, as at Sanganakallu; and coarse red ware by storage-jars, knobbed lids, dough-plates and rectangular bowls-on-stand. No dish was encountered in any of these wares.

Microliths, mostly of chalcedony, comprised lunates, pen-knife blades, fluted cores, trapezes and parallel-sided flakes. Ground stone industry was represented by chisels and celts (pl. XXII B and C), mostly of dolerite but one significantly of granite. The stone querns were of a huge size with the working-surface showing a depression. Associated with these were a number of pounders and rubber stones. A couple of mace-heads was also picked up from the surface of the mound. No copper objects were encountered in the deposits of this Period.

Period II, representing a 3.65-m. thick deposit, was marked by the use of the black-and-red ware of the early centuries of the Christian era. Associated with this were other historical slipped and coarse red wares, amongst which a globular pot with a flat base, short cylindrical spout and deep incised strokes on the shoulder is noteworthy. The deep incision, tubular spout and finger-tip decoration on the last-named vessel, no doubt, tend to assign it to an earlier period. The structural remains exposed of this Period included the rubble and clay foundation of a house measuring 7 X 3.35 m.

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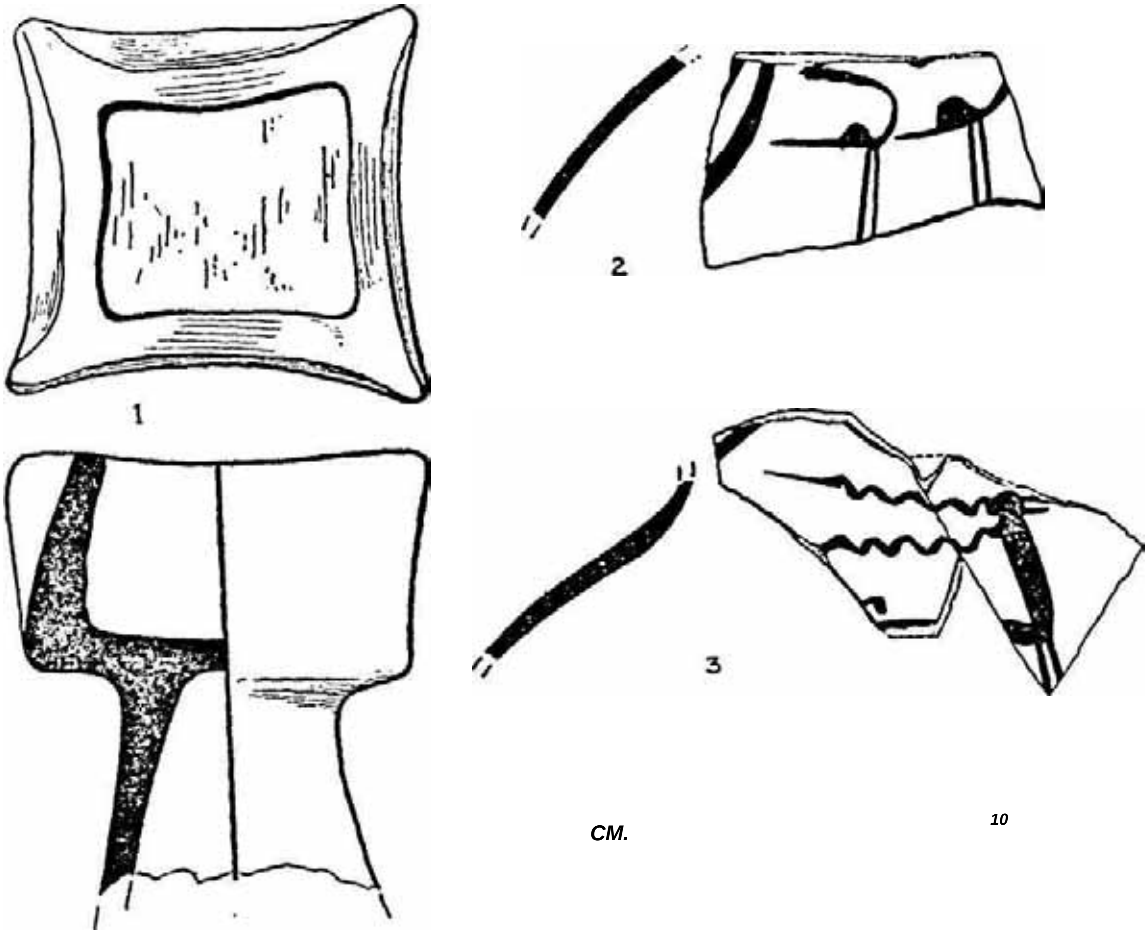


FIG. 5. *Songaon:* 1 *square bowl-on-stand, and 2 and* 3, *black-painted red Jorwe Ware, Period I*

MYSORE

48. EXCAVATION AT KUPGAL, DISTRICT BELLARY.—With a view to ascertaining the nature and origin of the ash-mounds, specially in the light of the earlier observations of Allchin, Foote, Newbold, Woolley, Yazdani and Zeuner, Dr. G.G. Mujumdar and Shri S.N. Rajaguru of the Deccan College Post-graduate and Research Institute, Poona, working under the direction of Professor H.D. Sankalia, carried out an excavation of one of the ash-mounds in Kupgal area, which had been earlier tapped by Newbold some time in the nineteenth century.

Excavation in the undisturbed portion of the mound revealed the following sequence of layers from top downwards; (1) light brown ashy soil, -35 m. thick; (2) whitish grey ash, -15 m. thick; (3) scoriaceous ash with a few vitrified potsherds and fragmentary animal bones, 2 25 m. thick; (4) pinkish-grey-banded ash, representing floor, 2.40 m. thick; (5) scoriaceous ash with a few vitrified potsherds and fragmentary animal bones, 1-35 m. thick; (6) light-brown-grey-banded ash representing floor, 1-25 m. thick; (7) dark brown humus-rich soil (top portion), 05 m. thick; dark reddish-brown soil (middle portion), 35 m. thick; reddish-brown gravelly detritus with patinated basaltic flakes and quartz flakes (lower portion of soil material), 75 m. thick; slight discon-formity; and (8) disintegrated brownish Bellary gneiss.

The evidence obtained in the excavation and the laboratory-analyses of the soils, slag, ashes and associated materials have indicated that on an uneven disintegrated gneissic surface, sand along with quartz and basaltic flakes, got deposited through colluvial processes. The climate probably was semi-arid, very much similar to that obtaining today, the fluvial processes acting only during occasional torrential rains. These pre-neolithic basaltic and quartz flakes were produced by employing the easily available local raw material. At the end of this phase, the climate became more humid and because of better vegetation in this area resulting in lesser soil-erosion, the humus-rich dark brown soil could develop well on the earlier colluvial detritus. The basaltic flakes got patinated with ferruginous material during this humid phase. The neolithic culture sprang up in this area after the formation of the dark-brown soil, when the climate again started shifting towards semi-aridity.

The various ashy and slaggy layers in the ash-mound appear to have resulted from the burning of accumulated cow-dung at varying but very high temperatures. That the burning was not continuous is indicated by the presence of two well-made floors composed of ash intermixed with kaolinic clay which, because of its binding capacity, imparted rigidity and strength to these floors. The activity of burning cow-dung on such a large scale could not be attributed to any industrial or metallurgical function because of the absence from the excavated material of any tap-slag, metal-ores, crucible pieces, corroded metalliferous pieces, etc. The metallurgical slag-pieces and iron-ore lumps, found in the surrounding fields, may, therefore, belong to the historical period when some sporadic metallurgical activity might have taken place.

The evidence obtained from this excavation supports the hypothesis of Zeuner and Allchin on the origin of the ashes and slag but is not adequate enough to support their dating of these mounds. Furthermore, the excavation has definitely established the presence of a pre-neolithic phase in this area. Both the patination of basaltic flakes and the formation of fairly mature humus-rich soil indicate considerable time-gap between the end of the pre-neolithic phase and the beginning of the neolithic culture.

49. EXCAVATION AT SANGANAKALLU, DISTRICT BELLARY.—With a view to understanding the problem raised by the late Professor B. Subbarao at Sanganakallu, a joint excavation by the Deccan College Post-graduate and Research Institute, Poona, and the University of Karnatak, Dharwar, was undertaken at the same site on the Sannarasama hill. The problem related to the precise horizon of patinated flakes of trap and microliths of quartz. According to the observation of Subbarao these occurred in the lowest layer on the hill and were separated by a sterile layer from the subsequent deposits of the neolithic culture. Since the area was very extensive, Dr. Z.D. Ansari and Shri M. S. Nagaraja Rao were entrusted with the excavation on the top of the Sannarasama hill, while Professor H.D. Sankalia excavated a small trench at the foot of the hill, about 200 m. from the Bellary-Mocha road and about .80 km. from Sanganakallu.

The excavation on the top of the hill showed that a large quantity of quartz flakes including few definite tools like lunates occurred in association with patinated flakes at the base of the main Polished Axe Culture (neolithic occupation). Therefore, on the hill, it was not possible to make out two distinct periods in these two industries, viz., of quartz microliths and of patinated flakes. But, in the trench dug at the foot of the hill, microliths, over 90 per cent of quartz including lunates and points, occurred in the dark-brownish soil lying about 10 cm. below the topsoil, whereas the patinated flakes, including discoids, choppers, chopping tools and long blades, all on trap, and a few highly mineralized bones occurred at the junction of the dark-brown sticky soil and the *morum*. It would thus appear that the microliths succeeded the industry in trap.

The same kind of sequence was revealed by the excavation of the Kupgal ash-mound (above, pp. 28-29).

On the top of the hill, the next occupation is of the Polished Axe people, divisible into two phases on the basis of pottery. In Phase I, a complete circular house (pl. XXIII,) about 5 metres in diameter, was found built on the original *morum*. The walls of this hut were of clay plastered on bamboo-screen. The latter was obviously supported by wooden posts, the average diameter of which was 25 cm. To the west of this hut was a sloping boulder which brought in a lot of rain-water. In order to prevent the flow of water into the hut, its floor was raised by covering it with flat rubble-stone, over which a fine floor was made by alternate layers of black soil and *morum*, the working-top being plastered with lime. In one corner of this house stood a hearth, while in the other was a storage-jar found resting on four flat stones. Between these four stones were a couple of stone axes and a rubber-stone. Incomplete plans of similar circular huts at the same level were exposed in the other five trenches. The associated pottery was of the usual pale-grey and the burnished grey wares, occasionally with post-fire ochre painting. In Phase II, a new intrusive element of wheel-made black-painted red ware was observed. As at Tekkalkota, a few bone tools were also found. From this Phase terracotta bulls resembling the paintings and bruisings on the hill were also obtained. Unlike Tekkalkota, however, the percentage of finished tools in the neolithic industry as well as the blade-industry was very small.

The top 30 cm. of the main trench on the hill showed an overlap with the succeeding Megalithic Culture, characterized by tulip-shaped bowls and conical lids in the Black-and-red Ware.

The sequence of cultures reconstructed from the various trenches excavated at Sanganakallu may now be correlated as follows : Period I, Stone Age (choppers, chopping tools, scrapers and prepared flakes, all highly patinated and on trap-dyke material); Period II, Microlithic (quartz flakes, cores, lunates and scrapers): Period III, Neolithic, with two phases (ground stone implements, pottery, circular huts, etc.); and Period IV, Megalithic of this sequence. No strata of Periods III and IV were found in the Mocha road trench.

50. EXCAVATION AT ANAGWADI, DISTRICT BIJAPUR.—In continuation of his pre vious work, Shri R. S. Pappu of the Deccan College Post-graduate and Research Institute, Poona, carried out a small-scale excavation at Anagwadi, 16 km. north-west of Bagalkot in *nullah* section on the Ghataprabha river. The site was later examined by Professor H. D. Sankalia.

Ten trenches, each measuring 1.54 m. square, were dug in a pebbly gravel. Two hundred and seven Early Stone Age tools, showing mostly the Acheulian technique, were recovered from the gravel which was found to be well-cemented with ferruginous material and in depth ranged from 45 to 62 m., represented by two layers. It was observed that tools were prominently concentrated in the upper layer, the approximate ratio of tools present in the lower layers to those present in upper layers being 1:2'3. No evolution in tool-technique, however, was noticed. It was also confirmed that the bed-rock underlying the pebble-gravel was laterite, having a thickness varying from 1 to 1.5 m.

51. EXCAVATION AT KOVALLI, DISTRICT BIJAPUR.—Shri R. S. Pappu of the Deccan College Post-graduate and Research Institute, Poona, undertook an excavation at Kovalli, situated at a distance of about 21 km. north-west of Bagalkot. The objective of the dig was to make a sample survey of the Middle and Late Stone Age tools. The

site lies about 4 km. away from the river Ghataprabha and is surrounded by hills of

Kaladgi range, made up of quartzites and limestones.

Tools were collected from an area 3 m. square at two different places where a good spread was noticed. From these two areas, finished as well as unfinished tools with their waste products numbering more than two thousand and five hundred were recover ed. Two trenches, each measuring 1 m. square, were dug in the same area with a view to understanding the nature of stratigraphy beneath the loose material. It was observed that red-soil layer of an average thickness of 2 m. was present beneath the loose material and in turn was underlain by outcrops of cherty material.

From the predominance of the unfinished tools and waste products in the industry as a whole and also from the mint-condition of the tools and the ready availability of the raw material, it was inferred that the area was perhaps a factory-site.

52. EXPLORATION IN DISTRICT DHARWAR.—Shri A. Sundara of the South-western Circle of the Survey, during the course of his exploration in Taluk Ron discovered a chalcolithic site at Hirehal and collected: sherds of grey ware of Brahmagiri fabric including a painted specimen; fragments of parallel-sided blades and a few flakes of black trap with polished surface. At the same site he also noticed a habitation-site of the megalithic culture yielding the usual Black-and-red Ware.

Besides, he located megalithic urn-burial sites at Gajendragad, Gandageri, Kala-kaleswara, Rajur and Unachageri and historical sites at Benachimatti, Hirehal and Kalakaleswara Kuntoji.

53. EXCAVATION AT HALLUR, DISTRICT DHARWAR.—Under the joint auspices of the Kannada Research Institute, University of Karnatak, Dharwar, and the Deccan College Post-graduate and Research Institute, Poona, a small-scale excavation was con ducted by Shri M. S. Nagaraja Rao at Hallur, situated on the left bank of the river Tungabhadra in Taluk Hirekerur. Two cuttings were made, revealing a 6.40 m. thick occupation deposit, of which the upper 1.50 m. was found to be much disturbed by modern burials. In all, three cultural periods were distinguished: (1) the lower neolithic, free from metal and microliths (blade industry); (2) the upper neolithic showing the intrusion of the chalcolithic element; and (3) the overlapped phase of the neolithic and the mega lithic culture.

The lower neolithic was characterized by a coarse brown-and-black, pale-grey and burnished black wares, occasionally painted with red ochre. The lithic industry comprised ground and pecked implements.

The upper neolithic or the chalcolithic phase distinguished itself mainly by the sudden occurrence of a large quantity of blades of black chert and copper implements, comprising miniature double-edged axes made on flat copper sheet, and fish-hooks, besides ground stone axes. The coarse brown-and-black ware continued to be the main ceramic industry, burnished grey and the pale-grey occurring in diminishing quantities. A noteworthy feature of this phase was the occurrence of a few sherds of the black-painted red ware. A large number of steatite and shell beads were also found.

The houses were circular on plan, as indicated by the position of post-holes; the floors were made of a rammed bedding of schist chips, while the hearths were circular. A double-pot burial containing remains of a child was found interred under the floor of a circular house. Three small vessels formed the funerary appendage.

A small quantity of charred grains and fragments of a neck-rest were also obtained from the deposits belonging to this phase. The pottery fabric, the black chert used for

the blade-industry and particularly the neck-rest are comparable with those from T. Narsipur.

The overlapped phase shows the sudden emergence of the Black-and-red Ware including that with the white-painted decoration and iron implements such as arrow-heads, spear-heads, etc. The neolithic stone tools and pottery also continued in use.

About 3 km. north of this site, a number of megalithic burials, mostly dolmenoid cists, were also located.

54. EXCAVATION AT T. NARSIPUR, DISTRICT MYSORE.—In continuation of the previous work (1961-62, p.35), the Department of Archaeology, Government of Mysore, under Dr. M. Seshadri, resumed excavation at T. Narsipur. This year's excavation further confirmed the existence of two main periods of occupation, the earlier of which is characterized by the use of typical burnished and unburnished hand-made wares and ground stone implements. In a small pit belonging to this period, several bone pieces, associated with charcoal and ash were found. Special mention may, however, be made of the occurrence of a quartz blade-flake with a prominent bulb of percussion and radial lines, suggesting that such blade-flakes were also used by the neolithic settlers at this site.

Wheel-turned pottery began to appear at the upper levels of this deposit which also yielded few sherds of the black-painted red ware and a biconical copper bead, suggesting the introduction of chalcolithic elements.

Period II was characterized by a full-fledged iron-using culture, with the megalithic Black-and-red Ware as the diagnostic industry.

55. EXPLORATION IN DISTRICT SHIMOGA.—Shri B. Narasimaiah of the Southern Circle of the Survey explored the area to be submerged as a result of the Sharavati Valley Project in Taluk Hosanagar and brought to light stray sculptures at Belur, Haletota, Kilandur and Satalam, assignable to the sixteenth century. Temples built in the time of Bednur Nayakas were located at Basavapura and Besage. A slab with a Kannada inscription of the same century was found at Basavapura and a few hero-stones of similar date at Haletota. A number of menhirs were located at Nilsukal.

ORISSA

56. EXPLORATION IN DISTRICT PURL—Shri K. N. Mahapatra of the Department of Archaeology, Government of Orissa, discovered important temples at Kantalbai and Rameswar in Tangi Police-station.

The temple at Kantalbai on the bank of the Chilka lake was built by the Raja of Khurda for the safe worship of the image of Sakhi-Gopal at the time of Muslim incursions in the seventeenth century. But the temple was deserted in the middle of the eighteenth century, when the deity was installed in a Satyabadi temple on the Jagannath road.

The temple of Ramanidhi, dedicated to Siva, is a monument of the Ganga period and can tentatively be assigned to the first half of the thirteenth century.

57. EXCAVATION AT KENDULI, DISTRICT PURL—The debris round the dilapidated temple at Kenduli in Balianta Police Station was cleared under the supervision of Shri K. N. Mahapatra of the Department of Archaeology, Government of Orissa. The clearance work brought to view the lower portion of an ancient brick temple, of which the presiding deity is a two-armed female goddess, sitting cross-legged on a seat of double

lotus under the canopy of a seven-hooded serpent. This brick temple can tentatively be assigned to *circa* eighth century. Besides, some loose sculptures notably representing Vishnu with a halo over his head and Bhairava were also obtained.

The floor of another ancient brick temple, dedicated to a four-armed Vajrayana deity under a canopy of seven-hooded serpent, also came to light. Very close to these two temples was found the lower portion of a Siva temple with its *linga* still in worship. The village has been identified with Kenduvilva, the birth-place of the celebrated poet Jayadeva, author of the *Gita-Govinda.*

PUNJAB

58. EXPLORATION IN DISTRICT AMBALA.—Slid D. K. Handa, a research-scholar in the Department of Ancient Indian History, University of Kurukshetra, found in the course of his exploration in the District : (1) Harappan pottery at Kurrara and Kurrari in Tahsil Kharar, Arnauli, Kainnaur and Bada-Samana in Tahsil Rupar; (2) Ochre-coloured Ware at Sarangpur in Tahsil Kharar; (3) Painted Grey Ware at Khera and Mehbubpur in Tahsil Jagadhari, Baterla. Chudiala, Khanpur, Nagiari and Rohan in Tahsil Kharar, Kodasan, Kohari, Ladhora and Tandwai in Tahsil Nalagarh and Patherheri-Choti and Singh in Tahsil Rupar. A number of these sites also showed early historical remains.

59. EXPLORATION IN DISTRICT AMRITSAR.—In the course of his exploration, Shri L. C. Singh of the North-western Circle of the Survey discovered coarse grey ware at Bharariwal, besides black-slipped, plain red and Sunga-Kushan red wares. The latter wares were also picked up from Gopalpura, Mandiala and Mattewal, all in Tahsil Amritsar. In addition, Tapiala in Tahsil Amritsar and Kakka Mandiala in Tahsil Taran Taran revealed only Sunga-Kushan pottery.

Shri H. K. Narain of the Survey noticed an ancient mound at Wazir Bhullar, 43 km. east of Amritsar. A few sherds of doubtful Harappan fabric, besides grey ware and Sunga-Kushan pottery, were also picked up.

60. EXCAVATION AT AUTHA, DISTRICT GURGAON.—A small-scale excavation at Autha was undertaken by Shri K. M. Srivastava of the Survey to determine the age of the skeleton of an elephant (pl. XXIV) which had been fragmentary exposed as a result of erosion and expectant diggings by villagers and, at the same time, to check up on the position of the Painted Grey Ware found on the surface. The excavation established that the earliest occupation at the site had been due to the Painted Grey Ware people.

As the entire mound is occupied by the present village, a very limited and disturbed area was available for excavation. On the basis of the restricted digging, the deposit at the site could be divided into four overlapping Periods. The earliest occupation, Period I, was represented by the Painted Grey Ware, a red variety of the same shapes being particularly noteworthy. The painted designs on the bowls and dishes comprised groups of horizontal, vertical and oblique lines, wavy lines, dots, a combination of oblique lines over three rows of dots, dots between vertical lines, oblique lines ending in dots, intersecting loops, a group of circular lines touching a horizontal band, concentric semicircles and circles. Iron, mostly in lumps, was found to be associated with this ware at all stages. The other wares of the Period included plain red, black-and-red and black-slipped wares. Glass objects, terracotta wheels and animal figurines, stone pestles and balls comprised the other important finds of the Period. No structural remains, except a few post-holes, were met with. The total thickness of the deposit of Period I was about 2 m.

The succeeding Period II was characterized by the Northern Black Polished Ware. Though fragments of this Ware were recovered only in the later levels, certain associated types overlapped with the preceding Periods. Large storage-jars, besides terracotta animal figures, ear-ornaments, bangles, flesh-rubbers, dabbcrs and beads and stone pestles constituted the other finds. Though no structure of burnt brick came to light, the use of bricks was clearly indicated by a robber's pit packed with large-sized burnt bricks. The occupational deposit of this Period was about 4 m. thick.

A clear-cut picture of the next two Periods, respectively belonging to the early centuries of the Christian era and the medieval age, could not be obtained as their deposits were considerably disturbed by enormous pits.

It was not possible to assign any exact date to the elephant-skeleton, complete but for stray disturbances, since it had been lying on the slopes of the mound, on the top levels of a deep pit cut into the^Painted Grey Ware deposits and the natural soil and sealed by eroded material of Period II and later Periods. It can, therefore, be roughly placed in the last stages of the Northern Black Polished Ware Period, i.e., *circa* second century B.C.

61. EXPLORATION IN DISTRICT KARNAL.—Shri K. K. Saxena of the Department of Ancient Indian History, University of Kurukshetra, during the course of his exploration along the banks of the rivers Sarsuti and Markanda in Tahsil Thanesar found: (1) Painted Grey Ware at Astipur, Bibipur-Kalan, Gudana, Hamirpur, Jalkhedi, Lukhi, Mchawa-Kheri, Murthala, Ramsaran-Majra. Sasa-Talhedi and Thanesar city-mound; (2) terracotta male head of the Sunga period from Thanesar city-mound; (3) sculptures of *circa* ninth-tenth century at Faridabad and Pehowa; and (4) coins of early Muslim period at Thanesar city-mound and Raja Karan-ka-Qila.

62. EXPLORATION IN DISTRICT LUDHIANA.—Shri D. K. Handa of the Kurukshetra University explored an ancient mound, 400 m. south of Dhandari-Kalan, a railway-station on the Ludhiana-Ambala section of the Northern Railway, and obtained pottery of the early historical period.

RAJASTHAN

63. EXCAVATION AT NOH, DISTRICT BHARATPUR.—In continuation of the previous year's work (1963-64, p. 28) the Department of Archaeology and Museums, Government of Rajasthan, under Shri Vijai Kumar, assisted by Shri P. L. Chakravarty and Shri B. M. S. Parmar, resumed excavation at Noh, the objectives of the present season's work being to find out the relationship of the black-and-red ware and the Painted Grey Ware and the position of the Northern Black Polished Ware in this region. With this end in view a trench, measuring 15x5 m., was taken up on the western slope of the mound. Excava tion revealed five cultural Periods distinguished as below:

Period I, represented by a -90-m. thick deposit of brownish clay, yielded the Ochre-coloured Ware, of which, except fragments of a handle, no complete shapes were available. One of the sherds bore incised decoration, simulating those obtained from the comparable levels at Atranjikhera. No other finds were obtained in this deposit.

Period II was marked by the use of the black-and-red ware which is represented mostly in dish- and bowl-forms and is unpainted, unlike that from Ahar. The associated ceramics included coarse red and black-slipped wares. No evidence of the use of copper and stone was available during this Period.

Period III was distinguished by the occurrence of the Painted Grey Ware showinc a rich repertoire of decoration. Besides, the black-and-red ware of the previous period

also remained in use. The other finds of this Period included: beads; terracotta discs with scalloped or angular designs at the rim; bone styluses with a socket-cover; iron objects comprising spear-heads, an arrow-head with a leaf-shaped point and a socketed tang and an axe with a broad cutting-edge; and copper objects. Charred rice was also obtained from the deposits of this Period.

Period IV was represented by the emergence of the N.B.P. Ware and its associated ceramics. Noteworthy antiquities of the Period comprised uninscribed cast coins, terracotta human and animal figurines, stone and terracotta beads and bangles and rings of copper. Of structural remains, mention may be made of two floors, with hearths.

Period V was characterized by typical terracotta female figurines showing an elaborate coiffure and jewellery and typical Kushan pottery. One of the bowls was found to be inscribed in Brahmi characters. Sherds with *triratna* and fish-symbols, resembling the specimens from Hastinapura IV, were also obtained from the deposits of this Period.

64. EXPLORATION IN DISTRICT DHOLPUR.—The Department of Archaeology and Museums, Government of Rajasthan, discovered, in an exploration of the Dholpur region an extensive ancient site near Abdulpur. Locally known as Dhonder-Khera, the site is situated on the confluence of the two rivers Medki and Maghi, both tributaries of the Parvati. Sherds of the Painted Grey Ware and black-and-red ware, besides Jaina and Saivite sculptures, were collected from this site.

Remains of two medieval temples were discovered near the villages Rajora and Sone-ka-Gurja. A number of medieval temples and epigraphs of *Vikrama-samvat* 1225, 1226 and 1228 were found in the Bhilwara region and at Dhod, 12-87 km. from Zahazpur.

65. EXCAVATION AT KALIBANGAN, DISTRICT GANGANAGAR.—In continuation of the previous year's work (1963-64, p. 30), the School of Archaeology and the Excavations Branch of the Survey resumed excavation at Kalibangan for the fifth season. The work, as in the previous seasons, was directed jointly by Shri B. B. Lai and Shri B. K. Thapar. Besides imparting field-training to the students of the School, this season's work had three objectives to realize : first, to investigate further the outline, thickness and other structural details of the Harappan (Period II) fortification-wall, specially on the eastern, northern and western sides of the smaller of the two mounds (KLB-1); secondly, to obtain plans of Harappan house of different structural phases as also to recover the street-planning at the larger mound (KLB-2); and thirdly, to expose some more Harappan graves for a proper estimation of the prevailing burial-practices. For the first objective, the previous season's trenches on the eastern and western margins of the mound were extended to cover the presumed alignment of the fortification-wall; for the second, deep digging was under taken at two selected places within the house-blocks, and horizontal digging in the main thoroughfare and for the third, fourteen graves were opened in the cemetery-area. No pre-Harappan (Period I) deposits were excavated during this season.

As a result of systematic planning, more details are now available about the outline and other structural features of the fortification-wall. It has now been shown that the fortification-wall did not run round the entire mound but divided it into two parts, the outline of the southern part being fairly clear. It is also likely, though not established, that there are no mud-brick platforms in the northern part. Since the accumulation in the latter rises to the level of that of the former, there is reason to believe that an equally important structure-complex, socially integral with that of the platforms, lies buried there. This inference is, however, based on surface-observations which still remain to be confirmed by further excavation.

On the southern side, the fortification-wall was already traced last year (1963-64, p.30). This year, the full length of the eastern side including the north-eastern turn was exposed. Since this side of the mound is very badly eroded, especially on the lower slopes, only the inner face of the fortification-wall was available, indicated at some places by the bottom course alone. Save at one place, the outer face was too eroded for determining the width of the wall or other features. As on the southern side, two principal phases, with possibilities of further structural sub-divisions, were also recognized here. Likewise, the foundations of the wall were found to cut through the strata or structures of the preceding occupation. At the north-eastern turn, the outer angles of the fortification-wall are insufficiently preserved to indicate its dimensions, much less any plan of the corner-tower.

On the northern side, stretches of the wall were traced in its entire length, and it was found that the wall was built on the existing slope of the preceding occupation which was often cut through or displaced for the foundations. The inner face of the fortification-wall bore mud-plaster, suggestive of its standing height above the inside ground-level. On this side also it was seen that the mud-brick platform within the citadel-complex was not of one build structurally with the fortification-wall, at least in the earlier phases. A reasonably well-preserved angle of a massive mud-brick platform, separated from the fortification-wall by a 2-20 m. wide passage, was exposed to establish the above premise. The fortification-wall at some places, notably in the central part of its length, showed a battered angle both on the exterior and the interior faces, the taper being obtained by thick coating of mud plaster. At the extant highest point, the wall was found to stand to a height of 3 -40 m., with its outer face (in the earlier phase) battered back to an angle of 34°. Although the thickness of the wall was available at a couple of places, it still requires to be properly determined, keeping in view the projections and the salients, the details of which are largely unknown at the present stage. The western end of this wall is incompletely preserved, both its inner and outer angles being absent. Nevertheless, at the north-western turn, remains of an impressive structure, perhaps part of a corner-tower with a battered exterior, (pl. XXVII A) were brought to light. This construction is in the nature of a reinforcement to an earlier damaged or eroded structure and both by the size of the bricks used and by the stratigraphic evidence, belonged to the second phase of the fortification-wall.

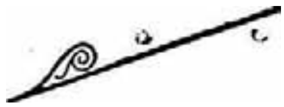
Despite patient search, no traces of the fortification-wall have so far been found on the western side beyond the turn of the corner tower. It may be recalled that no turning or re-entrant of the fortification was noticed at the south-western corner as well. The western side of the mound is badly riven by flood-water and modern depredations. It is likely, therefore, that all vestiges of the fortification-wall on this side have been completely lost.

With the available data, the plan of the fortification would roughly conform to a rhomboid.

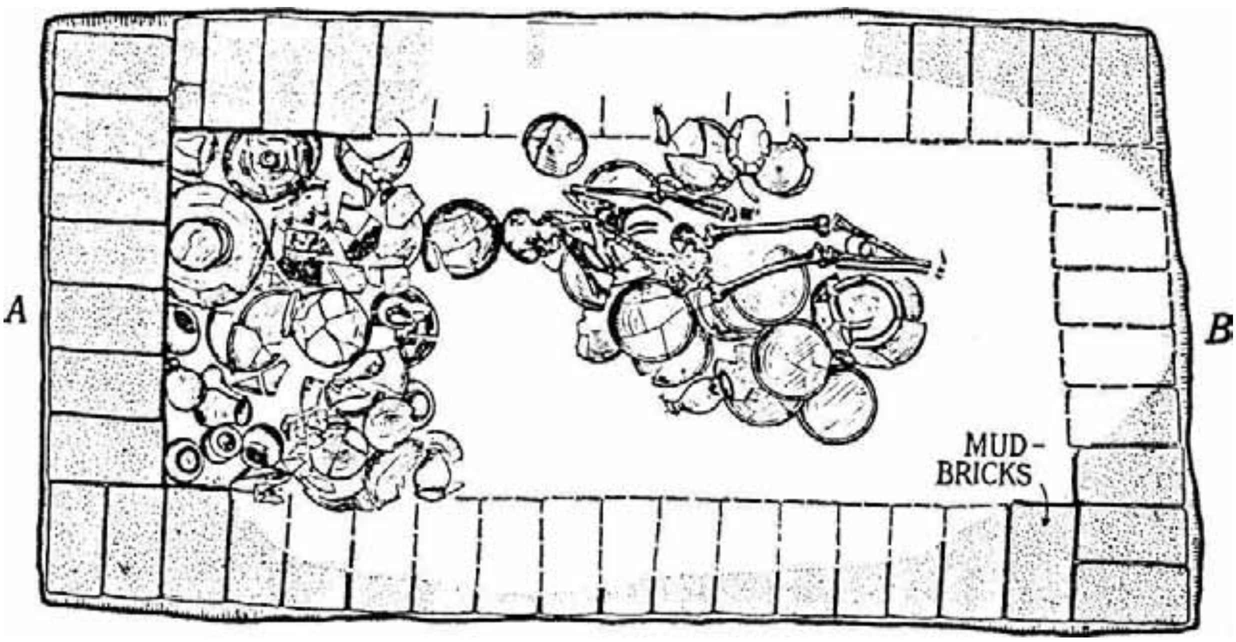
A corollary to the existence of fortification is a gateway. Although possibilities of a gateway both on the northern and western sides still remain to be explored, the site of an entrance belonging to the later phase of the fortifications was duly located on the southern side, between the central salient (pl. XXV) and the south-western end. This entrance (pl. XXVI) by virtue of its being an impressive baked-brick structure had suffered very badly from modern spoliation. The passage-floor or steps along with its baked-brick flanking masonry, had been ransacked for bricks with the result that now only the superstructure of it remains. The passage was 2.65 m. in width, and in the absence of well-preserved structures could be inferred to be stepped fronting the main fortification wall and, across it, terraced or a sloping ramp to reach the high platforms within the citadel.

KALIBANGAN, 1965

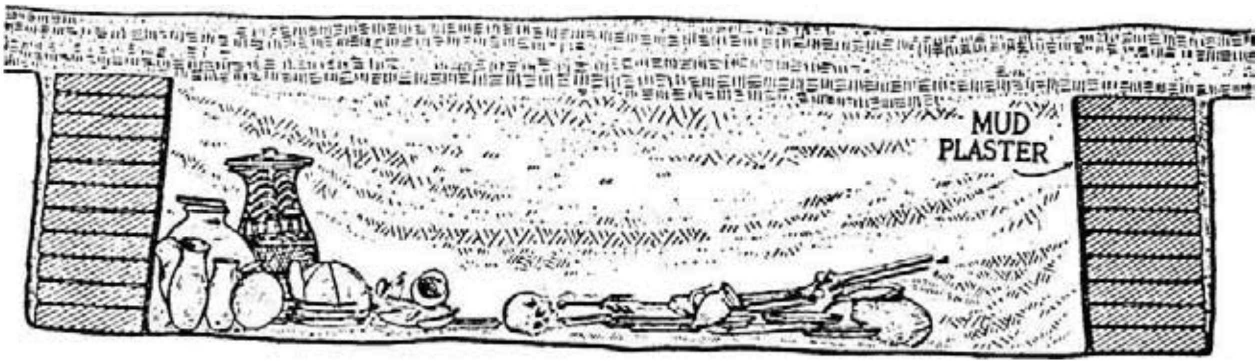
CEMETERY, GRAVE 29



PLAN



SECTION AB



METRE o

FEET

FIG. 6

At KLB-2, deep digging in two house-blocks (pl. XXIX A and B) indicated as many as nine structural phases (pl. XXVII B) within the Harappan occupation. Although plans of the houses of each phase are still incomplete, it is clear that a courtyard was an essential feature. The main thoroughfare, exposed in 1963, was horizontally excavated to a further length of 70 m. on the south, thus bringing it almost to the southern margin of the mound, where it was met by an east-west cross-lane (Pl. XXVIII). Noteworthy features encountered in the thoroughfare included pavements of bricks-on-edge, platforms or troughs, soakage-jars with outlets of house-drains and possible entrances. At one of the street-corners, the hole for a fender-post was also found, indicative of a busy vehicular traffic necessitating such precautions.

A wide range of finds including pottery, all typically Indus, was obtained from the excavated strata of both KLB-1 and KLB-2. Deposits of domestic refuse, besides stray disarticulated skeletal remains lying in the street, provided a good sampling of the animal bones. Preliminary studies have indicated the existence of Zebu or the Indian domestic humped cattle, the Indian buffalo, pig, *barasingha*, Indian goat, sheep, turtle, humped camel, Indian elephant, domestic ass, Indian rhinoceros, *chital* and fowl. Amongst these, bones of the humped cattle form the largest percentage. The occurrence of the bones of camel and antler fragments is significant. Besides, a large quantity of mollusc shells, obtained from one of the trenches at KLB-1, might indicate its likely use for lime.

In the cemetery-area, as already stated (above, p.35) fourteen graves were opened. Of these, only five contained extended articulated human skeletons along with deposits of pottery, etc. Two of these, however, presented special features. In one case, the skeleton was found lying on its stomach in prone condition with its head towards the south, quite contrary to the normal Harappan interment, and showed a crouching position with both legs and arms folded. Furthermore, it was placed only in the northern half of the pit along with seven pots, the southern half of the pit being almost vacant. In the second case, a regularly brick-lined grave (fig. 6) with a rich burial was encountered. The grave was almost rectangular (4 X 2 m.) in plan and was lined on all the four sides with mud-bricks (size: 40 X 20 X 10 cm.) which bore about 2 cm. thick mud plaster. The side-walls slightly lean inwards but were locked together in such a fashion that one end of each projected laterally across the end of the other in a clockwise form. The floor of the grave, however, was not paved. The grave goods comprising seventy-two pots were found to be deposited in two groups: (i) in the northern part with thirty-seven pots including an attractively decorated jar with lid and (ii) in the middle portion with thirty-five pots including platters and a jar. Significantly enough, the skeleton was found placed over the latter deposit in a supine condition with its head towards the north. Of the remaining three extended burials, one showed a pathological deformity in the left hand (pl. XXXA), of which the left radius and the ulna were found to be shorter in length as compared to their right counterparts. A large ring of shell, 65 cm. in diameter, was also found near the left ear, suggestive perhaps of its use as an ear-ring. The other was a normal interment with the skeleton at a slightly higher level than that of the pottery deposit (pl. XXXB), while the third showed only the upper half of the human skeleton in articulation, the bones' of the lower half being either disturbed or dislocated by a later pit. In addition to pottery, thirteen beads, three each of gold, jasper and agate and two each of carnelian and steatite were also found in the grave, the latter kept in a goblet.

Four pot-burials with circular pits, dug to an average depth of 40 m. below the present surface, were excavated. Of these, two were found to be badly disturbed by ploughing and yielded only broken vessels. Of the remaining two, one contained a jar accompanied by thirteen other pots including platters, goblets, etc., while the other had

only a tall dish-on-stand besides a jar. None of the pots, however, contained any skeletal material.

Besides these already-recorded varieties of burials, this season's dig brought to light yet another type, of which the grave was rectangular or oval, on plan with the larger axis oriented north-south similar to that of the extended skeleton variety, but was significantly marked by the absence of any skeletal material. The grave-goods in this case were limited to pottery and in one instance to a fragmentary shell bangle and a string of steatite disc-beads, besides one of carnelian (pl. XXXIA). Some of these pits again presented interesting evidence in respect of filling. Within the pit-filling, uniformly laid bands of fine sand and clay were seen overlying the pottery-deposit (pl. XXXIB) and in one case even running into it (pl. XXXII A). This would suggest that the pit, after the ritual involving the funerary deposit, was, due to some reason or other, left unfilled for some time, resulting in the deposit of these bands by weather-action. At a later stage, the remaining part of the pit was filled in by human agency with cloddy earth. Bands of sand and clay were also recorded in the filling of two graves of the extended human skeleton variety (pl. XXXII) where there was evidence of disturbance by later pits.

The occurrence of these three varieties of burials (?) has posed problems of relative sequence and sociological bearing. It may be recalled that the pottery and other finds recovered from each of these types is essentially Indus. Although the evidence for any generalization is largely inconclusive, at one place the burial with a circular pit was found to have cut an earlier rectangular grave of non-skeletal content. Furthermore, the circular pits are shallower in depth from the present surface. This phenomenon, however, cannot by itself be considered as positive or reliable. More definitive evidence is necessary to establish the relative priority, if any, of one practice over the other.

UTTAR PRADESH

66. EXCAVATION AT AHICHCHHATRA, DISTRICT BAREILLY.—Excavation was resumed at the fortified site of Ahichchhatra (fig. 7) by the headquarters office of the Survey under Dr. N. R. Banerjee, assisted by Shri N. C. Ghosh, Shri M. C. Joshi and Shri H. K. Narain, with a view to uncovering the lower levels in an area larger than had been exposed last year (1963-64, p.i43), besides recovering from them material for Carbon-14 determination.

The sequence of cultures noticed last year had to be modified due to the appearance of sherds of Ochre-coloured Ware (fig. 8) without any other remains in a clear-cut deposit of nearly 60 cm. over the natural soil. As this deposit was quite distinct from that of the Painted Grey Ware, till now the earliest ware on the site, it should be regarded as Period I of this part of Ahichchhatra. Consequently, the Painted Grey Ware phase should be redesig-nated as Period II, the Northern Black Polished Ware and the associated cultural assemblage as Period III, and the last phase, with Kushan and Gupta relics, as Period IV.

On an average, Period I was represented by a deposit of 60 cm., Period II of 1 m., Period III of 1 -2 m. and Period IV of 2.1 m. respectively. Except between Periods I and II, there were overlaps throughout.

To make sure of the sequence of cultures, a second site was taken up for excavation on the adjacent and higher mound. The excavation confirmed the earlier results, though the thickness of the respective deposits varied. The upper levels were disturbed as at the former site. The composition of the deposit with the Ochre-coloured Ware, Period I, was compact, clayey and hard, presenting a silty feel and look (pl. XXXIII A), while those with the Painted Grey Ware, Period II, were clayey with streaks of sand. The N.B.P. Ware, Period HI, deposits were marked by burnt clay and brick-bats, rammed into compact masses.

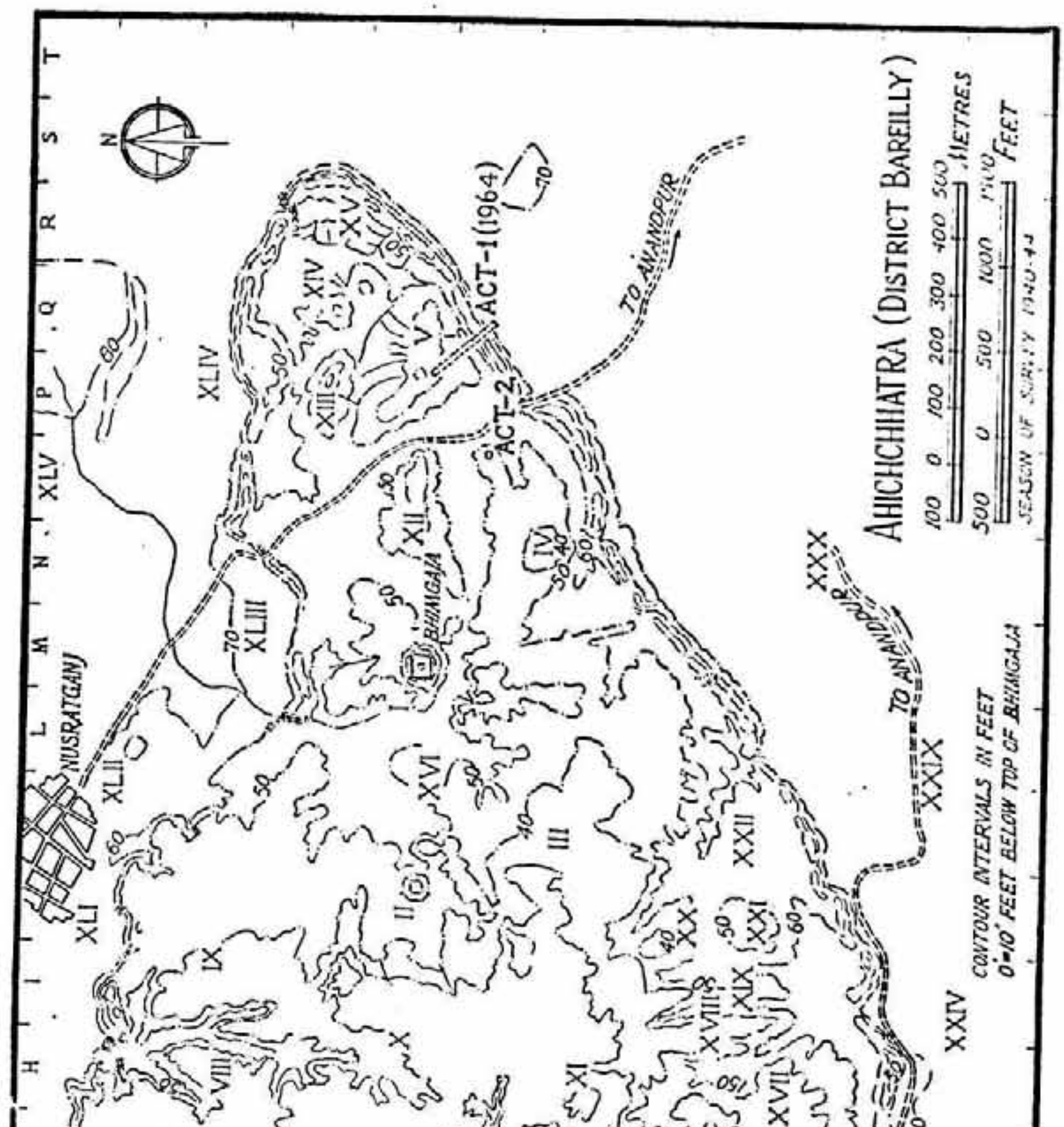

AHICHCHHATRA (DISTRICT BAREILLY)
METRES
FEET
CONTOUR INTERVALS IN FEET
0'=10' FEET BELOW TOP OF BHIMGAJA
TO ANANDPUR
TO RAMNAGAR
NUSRATGANJ
BHIMGAJA
ACT-1(1964)
ACT-2

FIG. 7

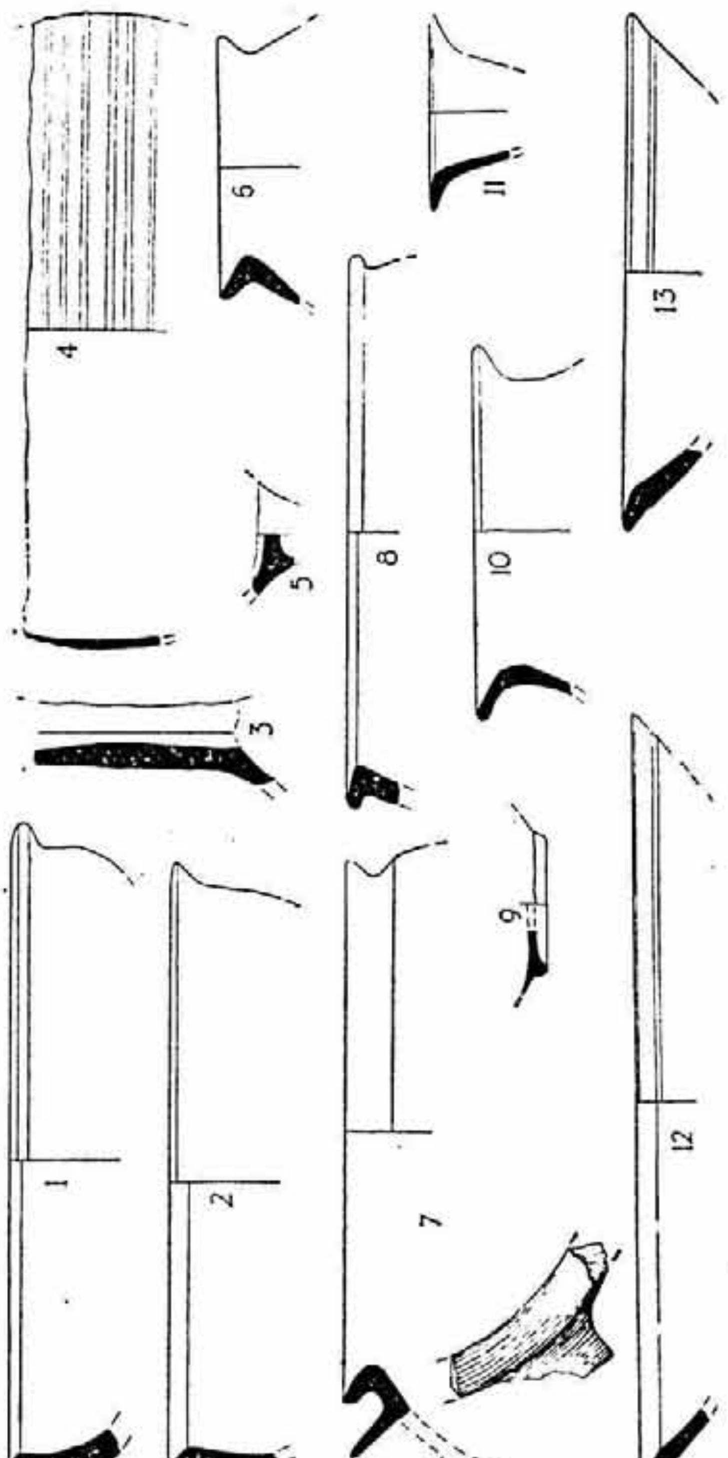


FIG. 8. *Ahichchhatra : Ochre-coloured Ware from Period I*

The Ochre-coloured Ware (pl. XXXIV A) of Period I was red slipped, with its slip lost and was generally thin in fabric, though thicker sherds were also observed in small numbers and medium-to-fine in texture. The following shapes could be made out from the frae-ments: the dish-on-stand with a hollow stem; the jar variously with a wide mouth slightly concave but tall neck, and flared-out rim growing into almost a flange, with a straight and tall but narrow neck and thin flanged rim, with a slightly-ribbed exterior with a foot-ring, with a flanged run and spout and with a concave neck; the bowl with a sliehtly-everted rim and a blunt ridge on the interior; and the basin variously with a thickened horizontal rim deeply notched on the exterior, with a thickened and protruding rim with a concavity at the neck and externally bevelled and thick rim, and with a thickened and flanged run. It is not possible to say whether any pot was painted, as the outer skin had invariably peeled off. The dish-on-stand was the only succestively connecting link with Harappa.

The find of copper coins of Achyu from the upper levels, i.e., Period IV of the first site, indicates a contemporaneity of the Period with Samudragupta *(circa* A D 330-75) But the find of a terracotta *sati-satta* plaque in a pit at the second site may point "to a later date for the upper levels of that Period.

An interesting find of Period IV in the upper level of the second site, apart from brick structures (pl. XXXIII B), was a block of quartzite stone with carved designs of a variety of ear-ornaments (pl. XXXIV B).

67. EXPLORATION IN DISTRICT BULANDSHAHR.—In the course of his rxnWntmn ShriR. P Sharma of the North-western Circle of the Survey notic d ft&^Vte at Barauh grey ware at Usmanpur (Qila Mewi) and Sunga-Kushan red ware a? Dasehra, Qawan, Hasangarh and Ronda.

68. EXPLORATION IN DISTRICT GHAZIPUR.—The Varanaseva Sanskrit TTmv^dtv under Shri R. B Narain, assisted by Shri Ashutosh Upadhyaya Shri P N Awasthi and Shri Rajaram Pal, during the course of exploration in Tahsil Saidpur of the District ocated ancient sites of Bhitari; Jauharganj, Kot and Rangmahal and col ected finds of the early historical period including the Northern Black Polished Ware

69. EXCAVATION AT MASAON, DISTRICT GHAZIPUR,—The Varanaseva Sanskrit University, Varanasi under Shri R B. Narain, carried out excavation at Masaon, a promising historical site explored earlier by Carlleyle in the nineteenth century^ WMi Sie present advance in knowledge of the culture-sequence of the Ganga basm it was felt desirable to conduct a scientific excavation here.

The ancient site, locally known as Masaon-dih, covers an area of nearly 450 X 250 m. and has been extensively despoiled by regular cultivation and the construction of theGorakhpur-Varanasi section of the North-eastern Railway. The southern portion of the mound, however, stands to a maximum height, rising over 11m. above the surrounding plains. A 10-m, square cutting, laid in the south-eastern part of the mound, revealed a 7.09-m. thick occupation deposit belonging to four cultural periods, ranging from *circa* early 600 B.C.to A.D. 600.

Period I (circa early 600 to 300 B.C.) having an average thickness of 5.49m.,had two principal sub-divisions. The earlier of these, represented by a 2.63.m. thick deposit, was marked by a plain coarse red, grey and black-and-red wares. Bone points, copper objects and terracotta discs with incised designs and balls formed the rest of the finds. The latter sub-division with an average thickness of 2.86 m. yielded the Northern Black Polished Ware including the painted variety, black-slipped, grey and red wares and a sprinkling of black-and-red ware. Among the other finds mention may be made of punch-

marked coins, terracotta figurines (pl.XXXVl), beads, bone points and microliths. Structures of baked bricks (size: 43 X 28 X 10 cm.) and three different brick-rammed floor levels were encountered in the strata belonging to this Period.

Period II *(circa* 200 to 100 B.C.), with an average thickness of .63 m., was marked by the gradual disuse of the ceramic industries of the previous Period and the appearance of the typical Sunga style terracotta figurines (pl. XXXVI). Other finds included punch-marked coins, copper pins, bone points, beads and miscellaneous terracotta objects. Structures of baked-brick (size: 39 X 30 X 6 cm.) and brick-rammed floorings were also exposed.

Period III *(circa* A.D. 100 to 200) yielded Kushan copper coins, and human and animal terracotta figurines (pl. XXXVI), beads, terracotta sprinklers, a red ware represented in different shapes and sizes and a degenerate variety of the black-slipped ware. Structures of baked bricks (size : 39 X 25 X 6 cm.) showing three rooms along with a brick flooring and a drain ware exposed (pl. XXXV). Within the strata of this Period, two structural phases were noticed.

Period IV *(circa* A.D. 200-600), having a -65-m. thick deposit, yielded: a terracotta seal, bearing Brahmi inscription reading *Golikdsya in* Gupta characters; atarracotta disc, bearing Brahmi inscription reading *Kacharasya;* gold objects; terracotta figurines in typical Gupta style; beads; shell and glass bangles and ivory game-pieces. Among the terracotta figurines a lady with a pitcher over her head and another in a typical ascetic style (pl. XXXVI) are very interesting indeed. A red ware, both slipped and unslipped, was the dominant ceramic industry.

70. EXPLORATION IN DISTRICT SAHARANPUR.—Shri Shankar Nath of the North-western Circle of the Survey in the course of his exploration noticed the Ochre-coloured Ware at Kajipura, Nirpalpur, Rajdhana, and Sikri and late Harappan material at Bahupura. All these sites, except Bahupura which is in Tahsil Saharanpur, are located inTahsil Nakur.

Shri V. K. Tiwari of the same office also noticed the Painted Grey Ware, grey ware, Sunga-Kushan red ware and medieval pottery at Bhatpura, Budher and Dholapara. All these sites are located near Sarsawa, Tahsil Nakur.

The headquarters office of the Survey, under Dr. N. R. Banerjee, assisted by Shri S. P. Jain, Shri R. Chatterjee and the students of the School of Archaeology, undertook exploration in the northern region of District Saharanpur as a part of the training-programme of the students. The area was chosen particularly with a view to tracing the extent, in continuation of the previous year's work (1963-64, p.53), of the late Harappan material and the Ochre-coloured Ware revealed by the excavations at Ambkheri and Bargaon in the same District last year (1963-64, p. 56). The region lying between the Yamuna and Hindon-Nadi, a tributary of the former, and covering an area approximately of about 1,600 square kilometres, was thoroughly combed and the sites mentioned in the appended table brought to light. They variously yielded Harappan material, the Ochre-coloured and Painted Grey Wares, ceramic types usually met with in association with the Northern Black Polished Ware, Sunga and Kushan wares and the typical ceramic types of the medieval period. Of these, the sites at Budhakhera, Janipur, Mandowala and Pajrana, all of which produced sherds of the Ochre-coloured Ware, are worthy of special mention. The site at Jainer yielded terracotta-cakes of the 'hand-grip' type, comparable with specimens found at Bargaon and suggesting Harappan affinity.

The following abbreviations have been used in the table: (i) *H=Harappan materials, (ii)OC=Ochre-coloiired Ware; (jJl)PG=Painted Grey Ware;* (iv) *NBP=materialassociated! with the Northern Black Polished Ware;* (v) *SK=Sunga-Kushan wares; and* (vi) *M=medieva pottery.*

Name of site		*Material*	*Name of site*		*Material*
Akbarpur	..	M	Maganpur	..	M
Anwarpur-Baraoli	..	SK, M	Majhndpur	..	SK(?)
Bhankror	..	SK, M	Mandowala	..	OC(?), NBP, SK, M
Bholni	..	OC, SK, M			
Budhakhera	..	OC(?),PG, NBP, SK, M	Mohiuddinpur	..	M
Dandauli	..	SK, M	MuzafTarabad	..	SK, M
Daulatpur	..	M	Naglajhanda	..	M
Dhaba	..	M	Nanauli	.. ...	H(?), M
Dudhi	..	M	Naushara	..	M
Faizabad	..	M	Pajrana	..	OC, M
Fatehpur	..	M	Patlokar	..	SK. M
Haraura	..	M	Raipur	..	NBP, M
Haripur	..	M	Rohalki	..	M
Hathauli	..	M	Sansarpur	..	M
Hasainpur	..	M	Sartha-Kursi..	..	M
Jainer	..	H, SK, M	Shekupur	..	M
Jaitpur-Khurd	..	M	Sikandarpur	..	M
Janipur	.	OC, SK, M	Sona	..	M
Khajnavar	..	SK, M	Taharpur	..	OC, SK, M
Khatauli	..	OC	Talehpur	..	M
Khirka-Zunarkar	..	SK, M	Tanda	..	M
Khurrampur	..	SK, M	Tauli	..	M
Lodipur	..	NBP, SK, M			

71. EXCAVATION AT RAJGHAT, DISTRICT VARANASI.- In continuation of previous year's work (1963-64, p.58), the Banaras Hindu Unveristy, under Professor A.K. Narain, assisted by Shri T.N. Roy and Shri O.P. Tandon, resumed excavation at Rajghat. The essential objective of this year's dig was to find out the archaeological potentiality of the area earmarked for the construction of a railway building. A trench measuring 10 X 10m. was laid out in this new area, opposite Sarva Seva Sangh headquarters. Excavation was also continued in the last year's trench on the river side in order to find out the extent and nature of the wood-remains, already exposed within the core of the fortification-wall.

In this area, the remains of the topmost cultural level (Period VI) were negligible having been deliberately removed for leveling-purposes. This also accounts for the absence of the medieval glazed ware in this part of the mound. The remaining occupation-deposits, with an average thickness of 9 m., belonging to Periods I to V, were found comparatively intact. Within this cutting well-preserved structures of all the Periods were encountered. Besides, the find of iron in the earliest levels at Rajghat was also established for the first time.

Sub-period IA, represented by a .80-m. thick deposit lying over the natural soil, yielded black-slipped, plain black-and-red, red-slipped and coarse gritty red wares. No structures were encountered in this Sub-period. Among the finds, mention may be made of the occurrence of iron in the earliest levels.

Sub-period IB was marked by the advent of the Northern Black Polished Ware in all its shades including the painted variety)pl. XXXVII A), other wares of the previous Sub-period also continued, but in diminishing quantities. A sherd of plain grey ware of the Painted Grey Ware fabric was also found in this level. A 5.5.cm.

thick floor of burnt clay with two post-holes and three pits, provided with terracotta rings in two, represented the structural activity of the Sub-period.

Sub-period IC represented the gradual decline of the grey ware and the introduction of some new ceramic industries (pl. XXXVII A). No structures, excepting two terracotta ring-wells, were found in this phase.

Period II witnessed the complete disappearance of the whole grey-ware assemblage of Period I; the red ware with all its variants still continued. In the upper levels of this Period, a brick-concrete foundation with *kankar-soling* and a terracotta ring-well were encountered.

Period HI represented the prosperous period of the site, as revealed by some impressive structures, belonging to three broad phases. The size of the bricks falls into two groups, 39 X 29 X 5 cm. and 40 X 25 X 5 cm. Amongst these, a well-paved brick platform and a well are noteworthy.

The intensive structural activity, begun in Period III, also continued in Period IV, which again showed three structural phases. Noteworthy among these were a concrete-jelly floor spread in a fairly wide area of the trench, a room and a brick-paved floor. The size of the bricks used in the room was 41 '5 X 26.5 X 5 cm.

Belonging to Period V were a small chamber, remains of a wall and a .flooring. The structural activity of Period V possibly came to an end with the wreckage of a temple-complex as evidenced by a number of architectural fragments along with a few stone sculptures in the uppermost levels of this Period.

Besides ceramics, the other antiquities recovered from the strata of the different Periods included: terracotta figurines (pl. XXXVIII A), both hand-made and moulded; terracotta seals and sealings; iron and copper objects; other miscellaneous objects (pl. XXXVIIIB) such as terracotta balls, discs, flesh-rubbers and stone pestles; beads and pendants of terracotta, glass, faience, precious and semi-precious stones including a carne-lian ring and an agate bangle fragment; two Kushan coins; stone sculptures and architectural fragments. Noteworthy amongst thejbeads were a boat-shaped bead of carnelian (Period IV), an agate bead with its'both ends covered with embossed gold sockets and a copper wire running through the perforation (Period V). Ivory, bone and shell provided the material for arrow-heads, antimony rods, ear-ornaments and bangles. A stone stylus with a deliberately-worked sharp point for incision was an interesting discovery from Sub-period IB.

In the last year's cutting, the outer slope of the massive clay structure was further traced up to a height of 4.24 m. from its base, exposing wood-remains all over the trench. It was noticed that a -25 m.-thick layer of ash, charcoal and potsherds intervened between the defences and the wood-remains. A cross-section of the wood-remains (pl. XXXVQ B) in one of the corners revealed that, despite heavy decomposition, its thickness varied from 3 to 5 cm. The smooth laying of the wooden planks in the nature of a platform and their possible stretch to a length of 34 m., from the present cutting along the bank of the Ganga, leads one to infer that the structure served as an ancient wooden platform. As a result of rise in the level of the Ganga and consequently deeper penetration of the flood-water, this wooden platform fell in disuse and floods became a source of constant danger to the city. It was at this stage that a massive clay embankment was built as a defensive measure against floods; it was not planned to be a regular fortification, a fact which is corroborated by three more cuttings laid in the same alignment. Further work, however, is necessary to establish the exact extent and purpose of the wooden plaftform and the clay embankment and the cultural periods to which these belong in the time-scale provided by the excavation.

WEST BENGAL

72. EXCAVATION AT HARAIPUR, DISTRICT BFRBHUM.—The Eastern Circle of the Survey, under Shri R. C. Kar, assisted by Shri R. G. Pandcya and Shri Amir Singh undertook a small-scale excavation at Solkhana, located on the western side of a tank in village Haraipur.

The excavation revealed a 3.5 m. deep occupation-strata represented by six layers. In the lower four layers, occurs both plain and painted black-and-red ware, showing a devolution from layers 6 to 3. In layers 5 and 4, a local prey ware, red-slipped, often on the outside and occasionally both on the outside and inside, was encountered,. In layer 2, some fallen bricks of a structure Were found. The bricks were seen resting on charred wooden logs lying horizontally.

The site yielded ten extended burials of children (pl. XXXIX) oriented north to south, with the heads slightly inclined towards the west. No funerary objects were found in these burials.

73. EXPLORATION IN DISTRICTS BIRBHUM, BURDWAN, MALDA, MIDNAPORE, PURULIA, 24-PARGANAS AND WEST DINAJPUR.—The Department of Archaeology, Government of West Bengal, under Shri P. C. Das Gupta, assisted by Shri D. K. Chakravarty and Dr. S. C. Mukherji located in the above Districts in the course of explorations: Middle Stone Age tools at Deulpota, situated in the deltaic flats on the north-eastern banks of the Bhagirathi, 9 .6 km. north of the Diamond Harbour; Acheulian handaxes and tools of the Middle and Late Stone Ages, besides a neolithic celt at Ganganir-Math, situated on the ancient terrace near Garbeta flanking the river Silavati, and at Kalgaon, situated on the eroded cliff overlooking the Kansavati near Midnapore; Late Stone Age tools at Nachpahari; and pebble tools at Nalhati, situated near the small hill of Devi Lalatesvari. In addition, a protohistoric site was also located at Potanda near Purandarpur in the basin of the Bakresvar and the Mayuraksi rivers in District Birbhum. Apart from sherds of the black-and-red ware and other characteristic pottery, a few microlithic flakes and four neolithic celts of the pointed butt-end variety were collected from this site. Brahmanical and Jaina sculptures were found at Pachandi in District Burdwan, Koshjuri and Pakbira in District Purulia, Bamangola in District Malda and Habra in District 24-Parganas and in the area of Raiganj in District West Dinajpur.

74. EXCAVATION AT PANDU-RAJAR-DHIBI, DISTRICT BURDWAN.—In continuation of the previous year's work (1963-64, p. 61), the Department of Archaeology, Government of West Bengal, under Shri P. C. Das Gupta, assisted by Shri D. K. Chakravarty and Dr. S. C. Mukherji, resumed excavation at Pandu-rajar-dhibi for the fourth season. The main objective of this season's dig was to ascertain the cultural sequence in the western part of the mound. Excavation not only confirmed the earlier-known fourfold sequence but also brought to light some new aspects of the occupation in each Period.

Period I represented a stage when the site was first occupied by a small community which built huts with floors of pellety laterite, occasionally burnt hard. A secondary burial, showing a headless skeleton (pl. XL A), was also recorded in the deposits belonging to this Period. The ceramics of the Period included hand-made drab ware showing impression of paddy-husk, black-and-red ware and plain red ware (fig. 9, 1) with coarse sandy fabric. Amongst other finds a solitary bone point deserves special mention. This occupation was brought to a close by a flood in the Ajay river, as evidenced by a 50-cm. thick bufiish silt-deposit overlying the strata of the Period.

Period II represented a flourishing stage of the occupation as shown by the occurrence of varied ceramic industries, viz., black polished, bright-red, black-and-red and lustrous

red wares (fig. 9, 2-5). Of the structural remains mention may be made of floors of pelletyjlateritc, with post-holes and ovens. The black-and-red ware was represented mainly, by the bowl (pl. XLIJ B) with sharp or blunt carinated shoulder and bevelled rim or with convex side and beaded [rim and the trumpet-shaped basin with a slightly sagger base. Apart from the frequent'examples of the channel-spouted bowl, occasionally stained with red ochre at the ends of the spout, were found sherds of the" black-and-red ware, often painted in white with dots, oblique strokes, etc., and of the red ware in black with horizontal or vertical bands, occasionally wavy or parallel. In forms a pedes-talled cup in black burnished ware and a knobbed lid or saucer (pl. XLI1 A) is of particular interest. Among other finds mention may be made of: a large number of microliths (pl. XLI A) including a few scrapers; bone tools, including points and arrowheads ; and copper objects, including a ring, a bangle and a nail-parer. As evidence of burial-practice were encountered three fractional burials, two belonging to children and one to an adult within the strata of this Period. Besides, a red-ware vase containing a human tooth, possibly representing a burial urn, was also recovered from these levels.

Period III was almost a continuation of the earlier Period with elaborations of certain elements and, significantly, associated with the use of iron. Among the noteworthy structural features of this period, mention may be made of a row of six elliptical ovens (pl. XL B), flanked by a thick layer of ash containing a broken sword-blade and iron slag, besides pottery. This may perhaps be evidence of iron-smelting at the site. A large

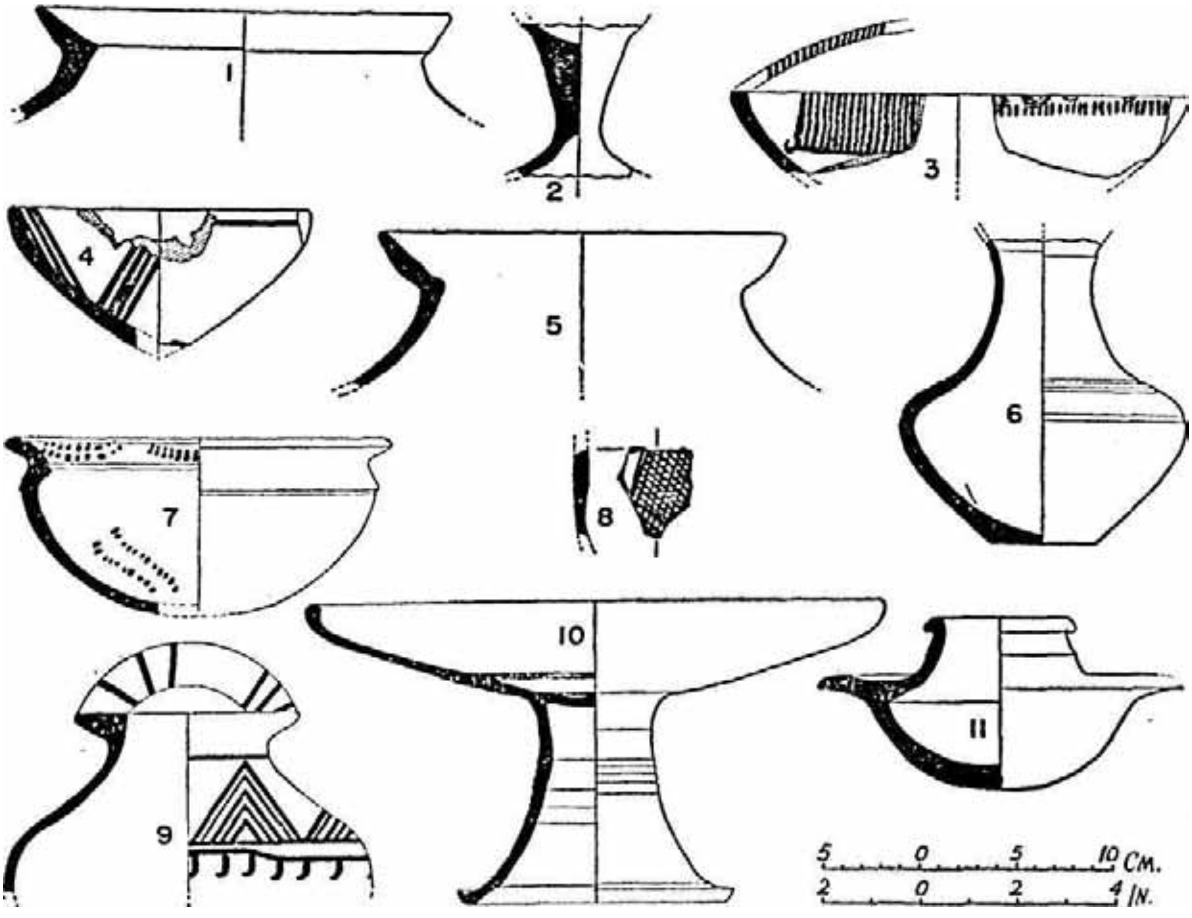


FIG. 9. ***Pandu-rajar-dhibi : pottery, 1, Period I; 2-5, Period II; 6-10, Period III; 11, Period IV***

quantity of charred rice was also obtained from one of the levels of this Period. The ceramics of this Period (fig. 9, 6-10) showed a continuity of earlier wares, red, black-and-red, black burnished (pi. XLII C and D), etc. The channel-spouted vases of this Period were found to be generally broader and with splayed ends than those of Period II. Among the ceramics, the black burnished ware was quite prolific. Some of it was also decorated with incised patterns like hatched triangles, wavy and pronged lines, stylized leaves, etc. An interesting form represented in this ware included a dish-on-stand, showing spiral grooves on the inner base of the dish. Among the miscellany of other finds mention may be made of: copper objects, including rings, bangles and a unique leaf-shaped spear or arrow-head (pi. XLIB), bone tools, consisting of tanged arrow-heads, picks and points (pi. XLI C); microliths (pi. XLI A); neolithic celts; beads, variously of agate, chalcedony and jasper; terracotta objects, including figurines with pinched head and flesh-rubbers; gold pellets and a broken pin; and iron objects.

Period IV, which followed after a lapse of time, showed two principal phases, the earlier of which related to the early historical period. The ceramics of the Period were varied and included black polished and pale-red wares, (fig. 9, 11). Among the finds recovered from this Period, mention may be made of a few sherds of the Northern Black Polished Ware, copper objects, neolithic celts, a saddle-quern, iron objects, a terracotta goldsmith's mould and a small disc-like gold bead. A few microliths (pi. XLI A) and two Middle Stone Age tools, evidently out of stratigraphical context, were also found in the upper levels of this Period.

75. EXPLORATION IN DISTRICT MIDNAPORE.—In continuation of the earlier work (1963-64, p. 62) the Department of Anthropology, University of Calcutta, under Professor D. Sen and Shri A. K. Ghosh, assisted by a group of post-graduate students, explored north-western part of the District and found Early Stone Age tools from Bamandiha, Belpahari, Kantabone, Krishnapur and Muransole. The implements consist mainly of choppers, handaxes and scrapers. Specimens were found embedded within the secondary laterite which is underlain by Archaean bed-rock and overlain by reddish soil. At places, especially near the *nullahs*, the secondary laterite is replaced by gravels containing tools. The implements are mostly made on quartz and quartzite. In hand-axes, an evolutionary sequence (from Abbevillean to Late Acheulian) is observed from the lower to the upper horizon. A beautiful Late Acheulian handaxe, found at Muransole in the secondary laterite, deserves special mention.

, From some of the above-mentioned sites microliths were also collected. At Kharsoti near the river Tarapheni, was discovered a site where a large number of microliths were found, some of them *in situ*. The types include blades, lunates (both blunted-back and sharp-back) and scrapers. From the nature of the finds *in situ* it appears that they occur within the reddish soil which is covered by a mantle of recent alluvium. The microlith-bearing reddish soil is of fine texture and is compact and sticky in nature.

On the high bank of the river Tarapheni, opposite the village Kechanda, two neolithic celts were found. The celts are unassociated with any other artefacts and have probably been turned up by cultivation.

76. EXCAVATION AT RAJBADIDANGA, DISTRICT MURSHIDABAD.—In continuation of previous season's work (1963-64, p. 62), the Department of Archaeology, University of Calcutta, under Shri S. R. Das, resumed excavation at Rajbadidanga.

With a view to obtaining complete plans of structures exposed last year, the area was extended on all the four sides. Structural remains belonging to six distinct phases were discovered, the more important of which were as follows.

Structural activity of Phase I was on the natural soil and of Phase II on the silt-layer which covered the entire area. Structures of Phase III to which belonged the *pan-chayatana* temple-complex were built on the ddbris of Phase II. To Phases IV and V belonged the oblong temple-complex with the *ardhachandra* enrtance-platform, walls, brick-bat platforms covered with *surkhi*-ramming, lime plaster, etc. Structural remains of Phase VI consisted of walls, floors, and brick-bat platforms.

The *panchayatana* temple-complex (pl. XLIII A) exposed on the eastern side of the extended area consisted of: (i) a rectangular enclosure-wall; (ii) four square shrines at the four corners; (iii) main temple of *triratha* plan;(iv) the rectangular *mandapa* on the north, *surkhi-rammed* platform (pl. XLIII B), etc. The compound-wall, measuring 20.87 m. in length on its western side and having several offsets at the plinth level on its southern face, contained beautiful niches and decorated and moulded cornices on its exposed southern and northern faces (pl. XLIV A). The exterior face of the walls was plastered with lime, traces of which are still seen in certain parts. The eastern side of the compound-wall with eastern ends of the northern and southern walls, however, were not exposed. Four shrines, each measuring 2.5m. square, were exposed at each angle of the compound-wall. The square shrine on the north-eastern corner was partly exposed and the one on the south-eastern corner was found considerably damaged and robbed. The south-western corner-shrine, partly exposed last year, was found in alignment with a platform, while that on the north-western corner was found in a better state of preservation and contained niches on all its sides, also showing decorated and moulded bricks. The rectangular main temple, measuring 7.84 X 7 m., had projections on three sides, leaving northern sides open for the entrance, thereby giving a *triratha* shape. The inner area of the main shrine, measuring 4.41 X 3.4 m., was *surkhi-iammed* and over it were laid bricks to form the platform. The rectangular *mandapa,* measuring 6.09 X 4.57 m., was built subsequently on the northern side of the main shrine. At a little later stage, an additional wall was built in an east-west direction, perhaps for shortening the *mandapa.* Towards the western end of the latter wall was found a dressed stone block probably used as a pillar-base. On the undersurface of this block were noticed rectangular recesses and channel-grooves. It seems, therefore, that the block was originally meant to be an image-pedestal but was subsequently used as a pillar-base.

The main *triratha* temple, *mandapa,* square shrines and the compound-wall provide a *panchayatana* temple-complex, which was in successive use during Phases III and IV. In Phase V, all these structures were covered by a *surkhi*-rammed platform, remains of which were in alignment with the square shrine on the north-western corner.

In the deep diggings on the southern and northern sides of the compound-wall and on the eastern, southern and western sides of the main temple-structure, building remains consisting of walls, platforms, etc. built on the silt layer, were encountered (pl. XL1VB). On the northern side of the compound-wall, another interesting structure consisting of a massive wall running in a north-south direction and meeting the compound-wall was exposed. This massive wall is also distinguished by niches and use of moulded bricks. On the southern[1] side of the compound-wall, platforms covered with thick lime-plaster and a massive wall, built on the silt-layer, were found. On the southern and eastern sides of the main temple-structure were also exposed *surkhi* floors of different occupatio-periods, the earliest occupational evidence being of Phase II.

On the southern side of the extended area, the excavation yielded another oblong temple-complex consisting of walls, platforms and *ardhachandra* entrance-platform on a rectangular basement. The rectangular basement, 2.66 X 1.37 m., was exposed on the

western side in alignment with the steps. The wall on the eastern side running in a north-south direction turned towards the east at its both ends. In the adjacent trench on the east was exposed the eastern extension of the wall along with the platform of Piiasc V. This wall contained on its northern face heavy mouldings with lime plaster and red coating covering all its offsets or projections. In alignment with the lower end of the moulding was discovered the brick-bat platform.

In the deep digging on the northern side, a wall and a platform of Phase II were exposed.

In the extended area towards the west, a massive wall running in the north-south direction showing different phases of construction, was met with. In the foundation-trench of the wall was found a human skull. In trenches further westward, were exposed walls, platforms, *surkhi-iammed* floors, etc. The exposed top of the wall was found in alignment with the *swkhi-iammed* floor. A huge pit consisting of several potsherds and loose soil covering the *surkhi-Tammed* floor and the wall yielded three bronze images and many inscribed terracotta sealings. Associated with this wall were other structures like a drain-channel from the *surkhi-rammed* floor, treasure-vault and two lime-plastered cells.

In the extended area towards the north of the original layout, three trenches yielded structural remains belonging to different phases of construction.

In the area towards the western end, a long massive wall, partly excavated last year, was fully exposed. It was found that the wall, running in the north-south direction and built on the natural soil, took a turn to the east. The excavated area also contained clear evidences of whitish silt-deposit left by innundation. In this area, walls, floors, ovens, corridors, rooms, etc., belonging to Phases II, III and IV were also exposed.

Datable finds from the excavation consist of inscribed terracotta sealings and stone seal (pl. XLV A-C), a few of them belonging to a period ranging between the seventh and twelfth centuries and three bronze images (pl. XLV D-F), assignable to the eighth-ninth century. Both these classes of finds were recovered from the deposits posterior to Phase III. The last three phases may thus be assigned to *circa* eighth to twelfth centuries. From the deposits belonging to Phases I and II was found pottery belonging to the first four centuries of the Christian era. The two earlier Phases may thus be ascribed to the early centuries of the Christian era, while Phase III may be regarded to have continued up to the seventh-eighth century.

Among the finds, the more noteworthy were the seals and sealings of which about one hundred and fifty pieces including broken fragments were obtained from deposits posterior to Phase III. Except for a few, legends on them are illegible. The commonest type, however, consists of a small circular disc containing inscriptions with the usual Buddhist formula in whole or in parts. Besides, spherical sealings with impressions in deep grooves and barrel-shaped sealings with impressions on one or both ends and occasionally on sides were also available. Amongst them the most important one was a circular flat sealing with the usual *dhanna-chakra* flanked by two deer and two lines of inscription below.

In addition to the terracotta sealings, a small stone seal having perforation and grooves was also discovered. On one side it contained a beautiful representation of *dharma-chakra* with legend and on the other the inscription reading *Devendra*, perhaps the name of an individual. Palaeographically, this seal is ascribed to *circa* ninth-tenth century A.D.

Three beautiful bronze images (pl. XLV D-F), two Buddhist and one of Ganesa, were found in a huge pit containing a large number of potsherds and loose soil which covered the *surkhi-rammcd* floor or corridor. Of the two Buddhist images, one represents Buddha seated in *bhwnisparsa-mudra* and the other Padmapani standing on a lotus-pedestal. The right hand of the latter image holds a lotus and the left hand is partly broken, on its crown is depicted Dhyani-Buddha. The seated Ganesa image is also a significant find. Stylistically, these three images are ascribed to *circa* eighth-ninth century A.D.

The pottery recovered from this site falls into three groups: (1) lower or earlier phase, characterized by ordinary dull red ware of thick section; (2) middle phase, distinguished by red, orange, brown, chocolate-brown, polished sherds, and (3) upper phase, marked by multi-coloured sherds having thick section. Painted sherds are very few and come mainly from the middle and upper phases. The painted decoration consists mainly of simple vertical or horizontal lines on red or brown or grey surface, geometrical design, fish-scale and floral motifs. Multiple decorative motifs are more common in the upper levels. A few sherds with graffiti were also found. Among the notable shapes mention may be made of the sprinkler coming from all the levels and a few ritual-pots with flanged rims. Except for a few handmade specimens, the entire assemblage is generally wheel-made, a characteristic feature being the common use of mica dust.

Terracotta objects recovered during this season's excavation include human and animal figurines, balls, discs, gamesmen. moulded tiles, flesh-rubbers, dabbers and beads. In addition, there were numerous other objects of stone, shell, glass, copper, bronze and iron.

77. EXPLORATION IN DISTRICT PURULIA.—Shri A. K. Ghosh of the Department of Anthropology, University of Calcutta, located, in the course of an exploration in the District, some Early Stone Age sites on the left bank of the Subarnarekha, and collected cleavers, Late Acheulian choppers and scrapers, some of them very fresh. Specimens were found *in situ* in the secondary laterite deposit which is underlain by loose gravels and overlain by reddish soil, the latter finally covered by recent alluvium.

78. EXPLORATION IN DISTRICT 24-PARGANAS.—The exploration in the lower Ganga valley by the Directorate of Archaeology, Government of West Bengal last year (l 963-64, p. 59) had yielded Stone Age tools in the generally silty terrain of this region. The above horizon of the implementiferous deposit, however, could not be located at that time. At the same time, it was necessary to have a larger collection of the artefacts to ascertain the tool-types for a comparative study with lithic industries in other parts of India. With this end in view a fresh exploration was undertaken jointly by Dr. R. V. Joshi of the Prehistory Branch of the Survey and Shri P. C. Das Gupta of the Archaeological Department of West Bengal.

During this work, the left (northern) bank of the Ganga river was examined from Deulpota to Harinarayanpur, covering approximaty 15 km. The survey revealed the occurrence of discontinuous patches of fine-to-coarse sand mostly at and around Deulpota. This sandy deposit, perhaps the horizon of the Middle Stone Age tools, yielded a large number of nodules besides the well-worked and finished implements. These tools are made on brownish chert and rarely on chalcedony and dark grey flinty material. The tools comprise unifacially worked sub-triangular points, borers, side-scrapers and hollow-

scrapers, the tool-outfit being of the Middle Stone Age complex. An interesting feature of the tools is their diminutive form which may either be due to the size of the available chert nodules on which they are worked or a special character of the lower Ganga Middle Stone Age industries. The latter postulate, however, needs confirmation by further examination of both the banks of this river, particularly upstream.

Along with the chert material, a flinty rock-material in the form of fairly large partially-fractured pebbles, carrying a thick coat of whitish patina was noticed. No finished tools were, however, found except some trenchet-like points or simple unworked points or cortex-covered flakes.

As was reported previously, this area also yielded pottery, mostly belonging to the early historical and later periods. The sherds occur in low talus all along the river-bank in this area. An attempt was made to trace the true locus of the pottery-bearing deposit by sinking a trial trench near Deulpota. While nothing tangible was found to a depth of nearly 2 m. of sticky, micaceous and in places sandy clay, some red ware sherds including fragments of lids and bowls, assignable to the Sunga-Kushan period, were recovered from a depth of about 2.5 m. below surface.

79. EXCAVATION AT CHANDRAKETUGARH, DISTRICT 24-PARGANAS.—Under Shri D. P. Ghosh and Shri C. R. Roychoudhury, the Asutosh Museum of Indian Art, University of Calcutta, resumed (1963-64, p. 63) excavation at Chandraketugarh. The work was continued at both the sites, viz. Khana-Mihirer-Dhipi and at Itkhola near the rampart.

A cutting across the rampart near the Itkhola area was made to establish its relationship with the various cultural periods identified at Chandraketugarh and to determine the character of its construction. The cutting extended up to the supposedly dried-up moat. Due to high water-table deep diggings, however, did not reach down to the natural soil in any of the cuttings.

Excavation revealed that the rampart, built of heaped-up earth, had two structural phases, the earlier of which was constructed in *circa* first century B.C. and the latter, being a reinforcement, in *circa* first century A.D. The moat, resulting out of the digging of earth, acted as an additional defence.

The basal layer of the rampart was composed of *surkhi*, brick-bats and potsherds. From the find of a large number of cast copper coins in this level it could be inferred that some sort of ritual was observed at the initial stage of its construction.

Below the rampart proper was found a massive wooden structure built of vertical logs set on horizontal planks—possibly a foundation connected with some house-complex of *circa* second century B.C.—and a soak-pit of the same complex. A noteworthy find from these pre-rampart levels was a mutilated terracotta plaque, vividly portraying the capture of wild elephants (pl. XLVIIB).

Operations at Khana-Mihirer-Dhipi finally established the sequence of the temple-structures (pl. XLVI A) so that interesting details of the plan and character of the temples are now available. A stone Vishnu plaque (pl. XLVII C), belonging to the early eighth century A.D., was recovered from the debris of the second phase covering ambulatory passage of the main temple. A lotus-medallion made of carved brick with a semi-precious stone bead placed in the centre, suggesting its use as a foundation-tablet, was found at the bottom of the square *kunda* (pl. XLVI B) in the centre of the miniature shrine of the mam temple at the north-east corner.

In the second phase of the temple-complex, two furnaces, used for burning shells ior making lime, as also troughs packed with burnt shells were unearthed (pl. XLVII A). It is a peculiarly significant complex by itself, perhaps unknown as yet from an early

site in India. The lime thus produced was evidently used as mortar and for moulding decorative stucco panels for the niches, mutilated remnants of which were found during the excavation. A miniature bronze image of a standing Maitreya, a rare iconographic type found in one of the uppermost layers of the Khana-Mihirer-Dhipi, was another outstanding find.

A flight of twenty steps, supported on two side-walls, was exposed in front of the temple. The eastern and northern sides of the temple-structure as well as the north-eastern miniature temple still remain to be unearthed.

H. EPIGRAPHY

SANSKRITIC AND DRAVIDIC INSCRIPTIONS[1]

ANDHRA PRADESH

1. INSCRIPTION, KAMMAVARIPALLE, DISTRICT ANANTAPUR.—Written in Telugu language and characters of about the eighth century, this inscription belongs to the reign of Vijayaditya and records a grant of land to a Brahmana.

2. INSCRIPTION, NANDALAPADU, DISTRICT ANANTAPUR.—Written in Telugu language and characters, this record belongs to the time of Chalukya Vijayaditya and refers to Banaraju as ruling from Pambuligi. It records a grant of land to a Brahmana of Bharadvaja-gotra.

3. INSCRIPTIONS, PEDDA-PALAMADA, DISTRICT ANANTAPUR.—One of them in Telugu, dated in Saka 122[7] (A.D. 1305), refers to the coronation of Jagatapi-Gangayadeva-maharaju who is described as *Pamidipuradhisvara* and a devotee of Bhoganatha and mentions Potaraju Pemmayyadeva-maharaju who bears the titles Chalukya-Viranarayana, Vegi-Tribhuvanamalla and Dharani-varaha and who along with o'.hers installed the deity Chennakesava in Ponumada of Pennapadi and granted land for its worship.

Another inscription, also in Telugu, assignable palaeographically to about the fourteenth century, records a grant of land to the same deity by *mahamandalesvara* Jagaddala Oddeyadeva-maharaju.

4. INSCRIPTION, PENDEKALLU, DISTRICT ANANTAPUR.—This Telugu record, dated Saka 1438 (A.D. 1516) in the reign of Krishnadevaraya of Vijayanagara, records the benefactions of Tippaya-Gopaya, son of Nademdla Timmaraju. The latter was the son-in-law of *mahapradhana* Saluva-Timmarasa who was minister to the king. It also refers to Lakshmamma, the wife of Saluva-Timmarasa.

5. MISCELLANEOUS INSCRIPTIONS, RAYACHOTY, DISTRICT CUDDAPAH.—Amongst a few epigraphs copied from this area, names of two hitherto unknown Vaidumba rulers, Kaliga Trinetra and Biruda Trinetra, could be read, Other records of the collection are of the time of Bedanga-Satyasraya of the Chalukya dynasty of Kalyani and Beta II of the Kakatiya house, besides a Tamil inscription belonging to the thirty-second regnal year of Kulottunga I which also throws some light on the genealogy of the Vaidumbas.

6. IKSHVAKU INSCRIPTION, KESANAPALLI, DISTRICT GUNTUR.—Dated in the thirteenth regnal year of the Ikshvaku king Chamtamula I, this Prakrit epigraph refers to the installation of a pillar within a *vihara* by some merchants.

7. BAHMANI INSCRIPTION, STATE MUSEUM, HYDERABAD.—Dated in Saka 1366 (A. D. 1444), this bilingual inscription in Sanskrit and Persian belongs to the period of the Bahmani Sultan 'Alau'd-Din II and records the victory of his father, Ahmad Shah, over Devaraja, commandant of the fort at Rajahmundry, besides refering to thecons-truction of a well by prince Mahmud Khan after the name of his mother.

[1]Information from: 5-7, 16, 18 AND 19, THE Director of Archaeology, Andhra Pradesh State; 20, 28, 34 and 35, the Director of Archeology, Kerala State; 27, Professor K.D. Bajpai, University of Saugor; 41, 42, 46-48, 50, 52 and 54 and partly 40, 49 and 53, the Director of Archives and Historical Monuments, Maharashtra State; 56 and 61, the Director of Archaeology, Mysore State; and the rest including 40,49 and 53, the Government Epigraphist for India of the Survey.

8. VIJAYANAGARA INSCRIPTIONS, KALAVA, DISTRICT KURNOOL.—Two Telugu inscriptions in this village are dated respectively in the reigns of Achyuta and Sadasiva of the Tuluva family. The first engraved on a slab set up in front of the Ramesvara temple is dated Saka 1452 (A.D. 1530) and records gift of lands in Ramapuram in Muddanuri-Kaluva by *Mannepebbuli* Bukkaraju Timmayyadeva-maharaju. The second, engraved on a slab set up in front of the Anjaneya temple, is dated Saka 1482 (A.D. 1560) and records the gift of income from taxes collected from several villages to Srirangacharya, son of Bhavanacharya and the grandson of Kandala Nayanacharya by Tipparaju Pinnamraju on the occasion of the first car festival for god Raghunayaka on the day of Sri-Rama-navami. The donors in the two records are stated to have received Muddanuri-Kaluva as *nayamkara* from the respective kings.

9. INSCRIPTION, KAPPATRALLA, DISTRICT KURNOOL.—This Telugu inscription on a rock near the market dated Saka 1659 (A.D. 1738) records that *mahanayakacharya* Suditineni Vemkatadri-nayangaru granted full rights over the lands in Kapataralla to the ryots *(rahituhi)* who had deserted the village due to oppressive taxation.

10. VIJAYANAGARA INSCRIPTION, A.NAGALAPURAM, DISTRICT KURNOOL.—This Telugu inscription dated in the year Plavanga (A.D. 1547) in the reign of Sadasiva engraved on a slab kept in front of the Anjaneya temple records the gift of income from taxes and levies from Nagulavaram to Kamdala Srirangacharya by Ramaraju Vemkatadri-ayyadeva-maharaju for the merit of the latter's father Sriramgaraju in the presence of Vitthalesvara at the instance of the king. The donee is stated to have received formerly the village Nagulavaram as an *agrahara* (see item 8 above).

11. INSCRIPTIONS, PEDDA-HUUTI, DISTRICT KURNOOL.—A fragmentary inscription on a broken pillar lying in the compound of the Bhogesvara temple is in Kannada language and characters of about the eighth century and refers to *Paramesvaradhiraja* and Pullatti.

Another inscription in Telugu in late characters is engraved negatively on a slab lying on the roadside and reads from bottom upwards. It records the construction of a *matha* by some persons.

12. INSCRIPTION, PITTIKAYAGULLA, DISTRICT KURNOOL.—Engraved in Telugu characters of about the ninth century, the inscription belonging to the reign of Kokili-raju records a gift of land to a Brahmana.

13. CHERAKU INSCRIPTION, PUSULURU, DISTRICT KURNOOL.—This incomplete inscription in Sanskrit and Kannada languages engraved in Kannada characters on a slab set up by the side of the Ramalingasvami temple is dated Saka 1210 (A.D. 1287) in the reign of the Cheraku chief Bollaya Reddi ruling from Kamdanavrolu. It records that the temple of god Mallinatha was renovated by Narayamatya *alias* Heggade Narayana-setti, the minister of Tripurantakadeva, the son of a feudatory of the king ruling from Pussuluru.

14. VIJAYANAGARA INSCRIPTION, PUSULURU, DISTRICT KURNOOL.—This inscription in Telugu engraved on a slab in front of Madhavasvami temple is dated Saka 1322 (A.D. 1400) in the reign of Harihara II. It records the gift of lands and garden to god Madhava by Ayyalaraju ruling from Pussuluru.

15. CHALUKYA INSCRIPTION, PUTSAKAYALAMADA, DISTRICT KURNOOL.—This Kannada inscription engraved on a stone in a field is dated Chalukya Vikrama year 35 (A.D. 1111) in the reign of Tribhuvanamalla (Vikramaditya VI). It records a grant of lands

and gardens by Beti-setti and Sarvadeva-setti when Mallarasa was ruling over Sindavadi-1000 from Kirtinarayanapura.

16. VELAMA INSCRIPTION, SRISAILAM, DISTRICT KURNOOL.—An epigraph recording the construction of a flight of steps by Madanayadu, a Velama king, at Srisailam was discovered.

17. INSCRIPTION, PALAVALASA, DISTRICT VISAKHAPATNAM.—Dated in Saka 1193 (A.D. 1271), in the reign of king Anantavarma Vira-Nara-Narasimha Ravutudeva, the inscription in Telugu refers to the construction of the *Srivimana* in the temple of Prasanna Janarddanavallabha and records a grant of land for food offerings to the deity by two chiefs named Yerapota-nayaka and Vidduma-nayaka.

18. KAKATIYA INSCRIPTION, WARANGAL.—Two works of a poet named Narasimha, son of Rajaguru Visvesvara, the spiritual preceptor of Kakatiya Ganapatideva, inscribed on a hillock near Warangal, were copied.

19. KAKATIYA INSCRIPTION, IRAGAVARAM, DISTRICT WEST GODAVARI.—A record of the reign of Ganapatideva, probably referring to his conquest of Kolanu, was copied.

KERALA

20. TAMIL INSCRIPTION, SULTAN BATTERI, DISTRICT CALICUT.—The inscription refers to a deed executed by Iravivarman, the king of Viravarayalnad, and some other persons.

MADHYA PRADESH

21. INSCRIPTION, MALHAR, DISTRICT BILASPUR.—A label-inscription in Sanskrit in Siddhamatrika characters of about the ninth century, engraved on a broken pillar on the tank bund to the west of the Patalesvara temple hails Ranakshobha, probably the Sailodbhava prince.

22. INSCRIPTION, GADHA, DISTRICT JABALPUR.—This inscription dated in Vikrama 1821 (A.D. 1765) in Sanskrit language engraved in Nagari characters refers itself to the reign of Nijamasaha and records the *pratishtha* of the image of Isana (i.e. Siva) at Gadhadurga probably by one Kritipati-mahanta.

23. BRAHMI INSCRIPTION, JABALPUR.—An inscription engraved on a slab kept in the Puratatva Sangrahalaya, Jabalpur, is in Brahmi characters of about the first century B.C. and in Prakrit influenced by Sanskrit (pl. XLVIII). It speaks of a certain Vasithiputra Sivaghosha and his minister. On the proper left side of this record is the figure of a person holding a spear m the right hand and the reins of two horses in the left hand leading them towards a kind of *yupa-stambha* by the side of which a *kamandalu* is depicted.

24. INSCRIPTION, JABALPUR.—An inscription in Siddhamatrika characters of the eighth-ninth century engraved on the pedestal of an image of a goddess lying in the Disrict Collector's office reads *sri-Kalyanadevi.*

25. INSCRIPTION JALAHARIGHAT, DISTRICT JABALPUR.- An inscription engraved on the pedestal of a *linga* on the banks of the Narmada is in Sanskrit language and Nagari characters of about the fourteenth century and records that the image of Nilakantha (i.e. Siva) was caused to be made during the reign of king Sangrama ruling from Gadha

26 LABEL-INSCRIPTIONS, POLIPATHAR, DISTRICT JABALPUR.—These inscriptions in local dialect and in late Nagari characters engraved below a number of figures carved on the pillars of the *mandapa* of the Siva temple locally called Badshah-mandir record the names of some of the *nakshatras*, *grahas* and *yugas*, of rivers like Ganga Yamuna, etc., of gods like Indra, Varuna, etc., and of goddesses like Kaumari, Chamunda, etc.

27 INSCRIBED CLAY SEALING, ERAN, DISTRICT SAGAR.—A clay sealing bearing Brahmi legend *Rajno Isvaramitraputrasya Rajno Simhasri-sensaya* in the characters of the third century A.D. with a river-symbol and three-arched hill was obtained from Eran. It seems to belong to a Saka ruler of Malwa.

MADRAS

28 MISCELLANEOUS TAMIL INSCRIPTIONS, SUCHINDRAM, DISTRICT KANNIYAKUMARI— Two inscriptions of the time of the king Chadaiya Maran, each recording a provision for setting up and maintenance of a perpetual lamp were copied. One of the epigraphs gives he name of the donor as Murukan Perumal of Tennadu A third inscription found here belongs to the nineteenth (15+4th) regnal year of Vira Pandya which refers to some religious endowments and donation of two perpetual lamps.

29. CHERA INSCRIPTION, KIRANUR, DISTRICT MADURAL—This fragmentary inscription (pl. XLIXA) in Tamil language and characters of about the ninth century, engraved on the stone used as the door-step at the entrance into the kitchen of the Vagisvarasvami temple, is dated in the second year of the reign of Iravi Kandan. This is the first-known inscription of this king.

30. INSCRIPTIONS, KIRANUR, DISTRICT MADURAL—Eleven inscriptions in Tamil language and characters of the thirteenth century engraved on the walls of the Vagisvarasvami temple are dated in the reign of Virarajendradeva, the ruler of the Kongu country and they range from the eleventh year (A.D. 1217-18) to the twenty-eighth year (A.D. 1234-35) of his rule. Eight of these register grants to the temple providing for lamps, gardens, etc., made by members of the group described as *Kiranur Mudaligal.*

31. INSCRIPTION KUNNATTUR, DISTRICT MADURAL—This inscription in Tamil on a hero stone depicting a person decapitating another is dated Saka 1409 Plavanga (A.D. 1487) in the reign of Sundarattol-Mavali Vanadarayar, a later Bana chief.

32 INSCRIPTION KUMBHAKONAM, DISTRICT THANJAVUR.—This fragmentary inscription engraved on a stone, built into the ceiling of the kitchen m the Ramasvami temple,, in Tamil characters of about the tenth century refers to several women described as *devanar-makkal.*

33 LABEL-INSCRIPTIONS, KUMBHAKONAM, DISTRICT THANJAVUR.—Seventy-eight Sanskrit' labels in Grantha characters of the twelfth century engraved below as many panels around the eastern *gopura* in the Sarangapanisvami temple give the names of the dance-poses (*karanas*) as detailed in Bharata's *Natyasastra* depicted in these panels They are numbered but are not in serial order. Two stray panels, apparently belonging to this group, are found built into the walls of the Kumbhesvara temple.

34. TAMIL INSCRIPTIONS, CHEMPAKARAMANALLUR, DISTRICT TIRUNELVELI.—Of the three inscriptions copied during 1964-65 the one dated *M.E.* 703 (AD. 1527).deals with appointment of a certain Ariyan Ulagudaipperumal Ramachandradeva in the post of temple-accountant by the Travancore king Udayamartanda-Varma. The second epigraph of M. E. 720 (A.D. 1544), mentions the privileges granted to a temple-accountant.

The third one, also belonging to M.E. 720, records the assignment of some land for conducting the *Chanpakaraman-sandi* in the temple and celebration of a festival connected with the natal star of the king.

35.TAMIL INSCRIPTION, SERMADEVI DISTRICT TIRUNELVELI.- Belonging to the third regnal year of Jatavarman Kulasekarea, this charter refers to the gift of a piece of land to a temple by prince Iravivarman, the brother-in-law of the ruling monarch. He is also mentioned in two other inscriptions found here.

36. PANDYA INSCRIPTIONS, KIVILPATTI, DISTRICT TIRUCHCHIRAPPALLI.- Three inscriptions in Tamil language and characters engraved on the walls of Rajarajacholisvaram-udaiyar temple are dated in the reign of Maravarman Kulasekhara I. One of them dated in the thirty-second regnal year (A.D. 1300) records the grant of the village Maniyankurichchi made free from taxes, to provide for festivals and food-offerings to the deities of Vandikkarul-seyyum-perumal and consort Iniyavan-tenar whose images were set up in the temple of Rajarajesvaram-udaiyar in Vadatali in Konadu. Another dated in the thirtyeighth regnal year (A.D. 1305) contains a prasasti of Chittiramelip-periyanattar and states that the body represented by the nagarattar of Sundarsolapuram alias Desiy-ugandapattinam and three other places met and assigned the revenue accruing as pattanappagudi on the articles of merchandise to the temple of Rajarajesvaram-udaiyar in Vadatali. The third, also dated in the thirty-eighth regnal year (A.D. 1306), records the grant of the village Korrankurichchi alias Tiruvedam-alagiyanallur made tax-free by the Urar of Vadatali for the maintenance of a monastery, to Mudaliyar Ilaiya-mudaliayr Dharmasivar of Rajendram belonging to the Bhikshamatha of the Lakshadhyaya lineage.

37. CHOLA INSCRIPTION, VALIKANDAPURAM, DISRICT TIRUCHCHIRAPPALLI.- Dated in the sixteenth year (A.D. 999-91) of the reign of Rajaraja I, this Tamil inscription engraved on the north wall of the central shrine in the Valikandesvara temple records a grant of land made free from taxes to provide for food-offereings to god Mahadevar at Tiruvalisvaram by Panchavan Marayan.

38. INSCRIPTION, VALIKANDAPURAM, DISRICT TIRUCHCHIRAPPALLI.- This Tamil inscription engraved on the tiers of the platform with the image of Dandayudhapani in the temple of Valikandesvaram and dated Saka 1413 (A.D. 1492) records the arrangement made by the *nattavar* of Van-nadu in respect of the contribution of oil-seeds by villages in the nadu for burning three hundred lamps daily in the temple of Tiruvalisvaram, Eramanchi Chengabama Timmaiyanayaka was the local ruler.

39. VIJAYANAGARA INSCRIPTION, VALIKANDAPURAM, DISRICT TIRUCHCHIRAPPALLI.-This Tamil inscription dated Saka 1566 (A.D. 1645) during the rule of Sriranga (III) records the arrangement made for the management of the temple by Paruvatayya, the agent of Kasturi-nayakkan who was himself the agent of Muttu-Venkatappa-nayakkar.

MAHARASHTRA

40. KSHATRAPA INSCRIPTION, PAUNI, DISTRICT BHANDARA.- This inscription in Prakrit language and Brahmi characters of the second century A.D., is engraved on a stone slab now deposited in the Central Museum, Nagpur (pl. XLIX B). It records the erection of a memorial-stone (*chhaya-khambha*) for Mahakhattava-kumara Rupiamma.

41. MARATHI INSCRIPTIONS, DHARUR, DISTRICT BIR.- Two inscriptions in Nagari characters of Saka 1598 (A.D. 1676) and 1604 (a.D. 1682) refer to the construction of a well. The later one also mentions the builder, Mahadji Trimal.

EPIGRAPHY

42. MISCELLANEOUS INSCRIPTIONS, MANUR, DISTRICT BIR.- Bearing Saka 1170 (A.D. 1248) as its date, this Marathi-Nagari inscription belongs to the reign of the Yadava king Krishna alias Kanharadeva and records the building of a temple by Thoratha, the brother-in-law of Krishna. Another inscription of Saka 1638 (A.D. 1716), which is in the Naganatha temple, also refers to the construction of a shrine.

43. YADAVA INSCRIPTION, PALI, DISTRICT BIR.- This incomplete and damaged Sanskrit inscription in Nagari characters of the thirteenth century engraved on a slab in the Mahadeva temple mentions Jejakabhukti in the introductory verses and contains a genealogical account of the Yadava dynasty up to Simhana. It seems to record gift of land by a Chandratreya king from the banks of Yamuna.

44. MARATHI INSCRIPTION, POWAI, DISTRICT BOMBAY Suburban.- The inscription registers a gift of land by mahasamanta Sri-Siupa to the wife of one Nagudaustara (Nagadevesvara) in village Pauve (Powai).

45. CHALUKYA INSCRIPTION, KOLHAPUR, DISTRICT KOLHAPUR.- This damaged inscription in Kannada written in characters of about the twelfth century and found at the Town Hall Garden, Kolhapur, contains an eulogy of the saint Nelliyadeva and refers to the rule of Chalukya Ahavamalladeva.

46. RATTA INSCRIPTION, ARDHAPUR, DISTRICT NANDED.- An inscription dated Saka 1113 and cyclic year Virodhakrit refers to a certain local chief, under the Yadavas of Deogiri, whose epithets are Rattavamsah samudbhavah and Amardaka-pura-varesvara.

47. CHALUKYA INSCRIPTIONS, SAGROLI, DISTRICT NANDED.- Four Kannada inscriptions of Vikramaditya VI of the Chalukya house of Kalyani were copied. Dated in his thirty-fifth, thirty-seventh (two) and thirty-ninth regnal years, they record the gifts of perpetual lamp, oil, oil-press and tax-income to god Sambesvara at Savaravalli (Sagroli).

48. CHALUKYA INSCRIPTION, SANGAM, DISTRICT NANDED.- Engraved both in Kannada and Nagari scripts, this broken inscription of Saka 1042 (A.D. 1120) belongs to the age of Chalukya ruler Vikramaditya VI.

49. CHALUKYA INSCRIPTIONS, HIMPALGAON, DISTRICT OSMANABAD.-Engraved on two stone slabs at Ganeshwadi, these inscriptions are in Nagari characters and Sanskrit language. One of them is dated in the twenty-fourth Chalukya-Vikrama year (A.D. 1099), in the reign of Vikramaditya VI. It records the construction of temples in Pippala for Brahma, Vishnu, Siva and other deities and the endowment of land in the same village by Bhima-senapati. The endowment included provision for feeding ascetics and disciples in the Sarasvati-mandapa in the same place. It contains an eulogy of Vadirudra-pandita and his disciples composed by the donor’s son Abhinava-Kalidasa Kalidasa-dandanayaka. The other record, which is undated, mentions the genealogy of Bhima-senapati and his various architectural undertakings including the construction of Bhima-Samudra tank at Ganeshwadi.

50. CHALUKYA CHARTER, KASAR-SIRSI, DISTRICT OSMANABAD.- Written in Kannada script and Sanskrit language, the charter consists of three copper-plates held together by a ring with an attached seal bearing the figure of Varaha in relief. It was issued by the king Vijayaditya Satyasraya of the Chalukya family in Saka 619 (A.D.697) during his stay in the camp at Rasenapura (modern Rasin, District Ahmadnagar). The purpose of this charter is to record the grant of a village named Jamalagama to three Brahmanas, viz. Kottisarma of the Kausika-gotra, Prabhakara and Prabhakara of the Bharadvaja-gotra

51. CHALUKYA INSCRIPTION, RAMLING-MUDGAD, DISTRICT OSMANABAD.—Dated in Chalukya-Vikrama year 32 (A.D. 1107) in the reign of Vikramaditya VI, this inscription in Kannada records a grant of land by *dandanayaka* Naravaidya Narayana-bhatta to god Nilakanthesvaradeva, whose image was set up by him at Mudagolu.

52. MARATHI INSCRIPTION, YEOTI, DISTRICT OSMANABAD.—Written on a thin and damaged copper-plate in Modi characters, this epigraph records the grant of certain privileges for offering a pregnant woman to be buried alive under the foundation of Nauburj of Naldurg.

53. YADAVA INSCRIPTION, JAMBGAON, DISTRICT SHOLAPUR.—Dated Saka 1117 (A.D. 1195), in the reign of Jaitugi (I), this Kannada inscription on a slab in the Hanuman temple commences with a *vachana* of Siddharama and records the grant of the village Jambugave for the worship and offerings to god Kapila-Siddha-Mallikarjunadeva of Sonnalige by Padmanabha-dandanayaka whose father, described as a *senadhipati,* is said to have hailed from Kasmiradesa.

54. KALACHURI INSCRIPTION, KAMTHI, DISTRICT SHOLAPUR.—This Kannada inscription records the gift of a piece of land and the name of the Kalachuri king Bijjaladeva.

MYSORE

55. PAMPAPATI TEMPLE-INSCRIPTION, HAMPI, DISTRICT BELLARY.—Engraved on a slab set up in the eastern wall of the *mukha-mandapa* of the temple, this Kannada inscription in Nagari characters is dated Saka 1432, Pramoduta (A.D. 1510), which falls in the reign of the Vijayanagara emperor Krishnadevaraya. It records the gift of some land by purchase in the village of Mudda (nnayal)-halli to Sai-bhatta, the son of Tirumala-bhatta of Hampe, for the purpose of daily offerings to the god Virupaksha, by Bukkaji-amma, the mother of Narasana-nayaka, evidently the father of Krishnadevaraya.

56. PANDYA INSCRIPTION, LOKIKERE, DISTRICT CHITRADURGA.—During the removal of debris around Isvara temple, Lokikere, an inscription of king Vijaya, belonging to the Uchchangi branch of the Pandyas, was discovered. Dated A.D. 1171 'it records the genealogy of Vijaya Pandya and a land-grant by him for the upkeep of the temple of Kailasadodeya-deva.

57. KADAMBA GRANT, CHAUDADANPUR, DISTRICT DHARWAR.—This Sanskrit charter in Nagari characters, dated Saka 1139 (A.D. 1216) and in the regnal year 35 of Kamadeva records the tax-free gift of the village Vegavadde together with Hoddanahalli and Vikkanahalli to a number of Brahmanas by the king's minister Mayideva of Naga-vamsa belonging to a royal family of Kasmira. It is stated that the gift-village had been received by the donor from the king himself.

58. VIJAYANAGARA CHARTER, DHARWAR, DISTRICT DHARWAR—This Sanskrit charter in Nandi-Nagari characters, dated Saka 156[2] (A.D. 1640) and cyclic year Vikrama records the grant, made by the ruler of Golapura, renamed as Srirangaraya-nagara after the donor, a Brahmana named Yiranki Visvanatha, who belonged to the Vasishtha-gotra, Rik-sakha, and Asvalayana-sutra and who was the son of Hari-bhatta and the grandson of Peru-bhatta.

59. RASHTRAKUTA INSCRIPTION, TAMBURU, DISTRICT DHARWAR.—This inscription in Kannada engraved on a hero-stone is dated Saka 853 (A.D. 931-32), Nanda in the reign of Rashtrakuta Gondara-vallabha (Govinda IV) and records the death of Anniga of Tam-mavura in a battle, when Kannaha-maharaja was ruling over Palasige-12000

60. CHALUKYA INSCRIPTIONS, TAMBURU, DISTRICT DHARWAR.—Five inscriptions in Kannada engraved on slabs lying in the compound of the Basavanna temple were copied. One of them belonging to the reign of Vikramaditya VI records the construction of a temple for Phaniraja at Tammiyuru *alias* Tambrapura by *Senigara* Chavunda. *Maha-prachanda dandanayaka* Madirajayya, a feudatory of Kadamba Guhalladeva, is stated to be administering Tammiyuru and Hannirppalli in Mavale-nadu. Another belonging to the same king and dated Krodhi (A.D. 1124), refers to Kadamba Jayakesiyarasa and Madirajayya and records a grant of land for feeding ascetics by *bhandasaleya* Barmmana. The third refers to the *dandanayakas* Madirajayya and Narasimha and records grant by (1) Padmavati for feeding ascetics, (2) *sandhivigrahi* Basavanna for lamp to the deity at Nakara-Jinalaya and (3) *sunkadhikari* Vamayya. The fourth, belonging to the reign of Jagadekamalla II and dated Saka 1066 (A.D. 1144) refers to Jayakesi, his sons Permadi and Vijayadeva and daughter Savitri who was married to Gangideva, the son of Taila-nripa, and also mentions Madirajayya and his family. It records the grant of land by Madirajayya for the merit of his deceased son Narasingadeva. The fifth, belonging to the reign of Taila III and dated Saka 1077 (A.D. 1156), refers to Kadamba Permadi and Mallarasa-dandanatha. This Mallarasa is said to be ruling over Tammiyuru and around, and the epigraph records that at his instance, Acharasa granted income from taxes to the deity Narayana of the temple of Chamundesvara.

61. PEDESTAL INSCRIPTION, KALYA, DISTRICT MYSORE.—The epigraph occurs on the base of a sculpture of Parsvanatha, found on the ruins of a Jaina settlement. It refers to the sanctification of this image by one Bahubalideva.

62. INSCRIPTIONS, ALAVANDI, DISTRICT RAICHUR.—An incomplete inscription engraved on a slab in the Siddhesvara-matha in Kannada language and characters of the twelfth century belonging to the reign of Chalukya Jagadekamalla Permadi contains an elaborate *prasasti* on the *agrahara* Alavindi and its four hundred *mahajanas.* Another inscription in Kannada on a slab set up in front of the ruined temple of Isyara dated Saka 1125 (A.D. 1204) in the reign of Hoysala Vira-Ballala (II), contains a similar eulogy and records the grant of lands by Chaudabhattopadhyaya and Gangarasa to god Ranga-natha. It also records the grant of a portion of income from *herjjumka* and other taxes by Samakanna, the *mahapradhana* of Ballayya, the son of Vira-Ballala and his chief queen Ketaladevi. It also refers to *ubhaya-nanadesi, mummuri-danda* and the five hundred *svamis* of Ayyavale.

63. CHALUKYA INSCRIPTION, KAVALUR, DISTRICT RAICHUR.—An inscription in Kannada engraved on a slab set up at the gates of the Gavi-matha dated in Chalukya-Vikrama year 21 (A.D. 1097) in the reign of Vikramaditya VI records the installation of an image of the deity Kesavadeva at Kauluru and the grants made to it by Santikavve *alias* Santiyakka, the daughter of Muddeya-bhatta and the wife of Ajaka, son of Hergade Kalimaya. Ajaka is said to have been made a general by Vavana-dandanayaka and to have met with his death subsequently in a battle.

64. KALACHURI INSCRIPTIONS, KAVALUR, DISTRICT RAICHUR.—Six inscriptions in Kannada engraved on a slab in the Harihara temple in the house of Khile-gauda are dated in the reign of Kalacnuri kings Samakamadeva and Rayamurari Sovideva. All these records except one are dated in the regnal years of the kings. They refer to the installation of the deity Harihara at Kauluru by *Padavalara* Echimayya-nayaka and record grants by this chief, Hoysala Vira-Ballala and his queen Remmadevi and some others.

ORISSA

65. CHARTERS, ORISSA STATE MUSEUM, BHUBANESWAR, DISTRICT PURL—One of the five copper-plate charters, which was found at Jayarampur, District Balasore, is written in Sanskrit language and in the east Indian characters of about the sixth century A.D. It belongs to the time of *maharajadhiraja* Gopachandra, son of [.] nachandra and is dated in his first regnal year. It is highly damaged and appears to record the king's ratification of the gift by purchase of the village Svetavalika by the *mahasamanta-maharaja* Achyuta for the construction of a Buddhist *vihara*, for the daily worship therein and for the maintenance of the Buddhist monks and refers to Arya-Avalokitesvara. The second charter discovered from Khargaprasada, District Dhenkanal, belongs to the time of Vinitatunga of the Tunga dynasty and is dated in the year 161 (of the Bhauma-Kara era). It records the royal gift of a piece of land in the Lavandaicha village to Bhatta Isana, son of Ananda and grandson of Kulasarmman, who hailed from Podhe and resided at Kotamala and belonged to the Kasyapa-gotra. The engraver was Venika Duva-dasa (Dhruvadasa).

The third charter from Athamallik, District Dhenkanal, belongs to the ninth regnal year of *ranaka* Ranabhanja of the family of Bhanjas of Dhritipura. It records the royal grant of the village Varisama which is attached to the *Raira-vishaya* in the Khinjali-*mandala* and which is watered by the river Moranadi (i.e. Mayuranadi) on the occasion of a lunar eclipse. The donee was Pandita Varada of the Vatsa-gotra, the son of *Bhata* Sahara and grandson of *Bhata* Iyaka, who hailed from Talahataki in the *Varendra-mandala* and resided at Tari.

The fourth charter discovered at Chitalpur, Hindol sub-division, District Dhen-kanal, belongs to the time of Vira-prachandadeva of the Kulika-vamsa, not known so far. Written in corrupt Sanskrit language and Nagari characters of about the tenth century, it records the ruler's grant of the village Dadapati in the Kurmadeva-*vishaya* to the three brothers named Duvanandi (Dhruvanandi), Viranandi (Viranandi) and Uganandi (Ugranandi), the sons of Ravinandi of Bhattagrama in Varendri.

The fifth charter stated to have been found in a village in the Nayagarh sub-division, District Pun, belongs to the time of king Nettabhanjadeva of the family of Bhanjas of Van-julvaka. Issued from Vanjulvaka, it records the royal grant of a part of the king's fief-village Gundapataka in the Nannakhanja-*vishaya* to the merchant Aichadataka of Kasyapa-gotra, the son of Vapadata and grandson of Apadata and great-grandson of *vanika* Gargadata, hailing from Tribhuvanapura in Varendri. The record was authen-ticated *(lanchhita)* by *mantri Bhatta* Vapudeva who was authorized by the queen Jayama-hadevi. It was written by *sandhivigrahi* Jayastambha and engraved by *akshasali* Duga-deva (Durgadeva). The supplementary record at the end refers to a grant of land in connexion with the consecration of the *chakra* of Purushottama.

66. COPPER-PLATE GRANT, MAHULPARA, DISTRICT PURL—This charter is now in the possession of Shri S. C. De, Assistant Director of Archives, Government of Orissa Bhubaneswar. It belongs to the eleventh regnal year of the Somavamsi king Mahasiva-gupta Dharmaratha and records the royal gift of the village Bhilvi in the Abhayana-khanda in the Anuruda-vishaya to Rana-Abhimanyu, the son of Vasu and grandson of Damodara, belonging to the Kasyapa-gotra.

RAJASTHAN

67. IMAGE-INSCRIPTION, PAROLI, DISTRICT BHILWARA.—On the pedestal of a stone image of Adinatha in the sitting posture is engraved a Sanskrit inscription dated

Vikrama 1645 and Saka 1510 (A.D. 1588). It refers to the reign of Akbar, evidently the Mughal emperor and speaks of a Lunakarna, said to be a Solanki.

68. IMAGE-INSCRIPTION, ACHALGARH, DISTRICT SIROHI.—On the bank of the tank called Mandakini-kund is a small shrine containing a black stone image of standing Krishna-Vishnu on the pedestal of which is a Sanskrit inscription dated Vikrama 1300 (A.D. 1243) recording that the image of Krishna was caused to be made by *Sa°* Mala for the merit of *Sa°* Jasadhavala, the son of Visala.

69. IMAGE-INSCRIPTION, DHANTA, DISTRICT SIROHI.—A stone image of the goddess Mahishasuramardini occurs on the outskirts of the village and on its pedestal is found a damaged inscription which refers to the reign of the Paramara Somasimha in Chandrayati and mentions the village Dhanatagrama and Sigaradevi (i.e. Sringaradevi) evidently identical with one of the queens of Dharavarsha, father of Somasimha. It is dated Vikrama 1277 (A.D. 1220) and seems to record that the image was caused to be made by a person whose name is not clear. This is the earliest record known so far of the king.

70. INSCRIPTIONS, POSITARA, DISTRICT SIROHI.—A stone pillar lying outside the Isyara temple at the place bears some inscriptions, one of which, in local dialect, dated Vikrama 1236 (A.D. 1176), seems to record some gifts of *drammas* to the temple of Pulatesara (Pulastyesvara) for the purpose of offerings, by some individuals among whom figures *Ra°* Vachharajadeva, the son of *Ra°* Upala, who was the son of *Ra°* Mokala, of the Chahamana family belonging to the Vachchha-gotra (Vasta-gotra). Another inscription in Sanskrit and local dialect engraved on the same pillar is dated Vikrama [15*] 14 and Saka 1380 (A.D. 1157) and it records that Tara, the son *of Thakura* Naina donated a sum of four *drammas* to the deity Palastesvara (same as Pulastyesvara).

A third inscription in Sanskrit is found engraved on the lintel of the doorway of a small room in the same Isvara temple. This is a fragmentary record written in Nagari characters of about the thirteenth century, referring to the reign of *Maharajakula* Samantasimha of the Songira Chauhan family and mentioning *Raja* Ka------, perhaps Kanhadadeva, the son of the former.

WEST BENGAL

71. INSCRIPTIONS, STATE ARCHAEOLOGICAL GALLERY, CALCUTTA.—One of the inscriptions in Sanskrit and in Nagari characters of the ninth-tenth century, is engraved on the pedestal of a stone image of Surya which was found at Mahisantosh, District West Dinajpur. Dated in the fifteenth regnal year of the Gurjara-Pratihara king Mahendrapala I, this epigraph records that the image of Aditya was caused to be made by Lokanandi, the son of Gajjanandi and grandson of Vishnunandi.

Another inscription on a stone slab found at Netai, District Midnapur, is in Oriya language and alphabet and belongs to the nineteenth regnal year of the Gajapati king Kapilesvaradeva *(circa* A.D. 1435-67). It seems to record a royal grant of a land to a certain Gadadhara.

ARABIC AND PERSIAN INSCRIPTIONS[1]

ANDHRA PRADESH

1. MISCELLANEOUS INSCRIPTIONS, HYDERABAD.—TWO interesting epitaphs register the dates of the demise of a Qutb Shahi nobleman, Khairat Khan, who, as we know, held

[1]Information from : 18 and 19, the Director of Archives and Historical Monuments, Maharashtra State; and rest, the Superintendent for Arabic and Persian Inscriptions of the Survey.

the post of *sar4-sar-naubat* and had visited Persia as a Qutb Shahi envoy, and of his son, Baba 'Abdu'llah. Both expired at an interval of five months in A.H. 1055 (A.D. 1645) The calligraphy of these inscriptions is of a fairly high order. An important record of self-immolation (performance of *sati),* which took place in Hyderabad as late as in the middle of the eighteenth century, states that Harkunwar, wife of Lala Chain Rai, mother of Shadi Lai and grandmother of Raja Meghraj, secretaries *(munshiyan)* to Nawab Walajah. *subedar* of Arkat (Arcot) performed *sati* in A.H. 1171 (A.D. 1757-58).

BIHAR

2. INSCRIPTIONS OF THE MUGHALS, DISTRICT MONGHYR.- An inscription from Kharagpur of the reign of Shah Jahan assigns the construction in A.H. 1067 (A D 1656-57) of a mosque to Raja Bihruz, a distinguished local chief. Another record from the same place, pertaining to the reign of Aurangzeb, designates Kharagpur as Afzu’n-Nagar and registers the construction of a mosque by Zubdu'n-Nisa, daughter of Khan-I-Khanan, during the governorship of Raja Tahawwur As’ad in A.H 1107 (A.D. 1695-96).

DELHI

3. MISCELLANEOUS INSCRIPTIONS, DELHI.—An early epitaph, whose text was composed by the father of the deceased, records that As’ad, son of Husain died in A.H. 611 (A.D. 1214-15). It further mentions that As’ad had learnt the *Qur’an* by heart at the age of seven.

Another record assigns the construction of the tomb of the famous saint Shaikh Hamidu'd-Din to Sulaiman son of Shaikh Bikh (Bhikh) in A.H. 974 (A.D. 1566-67). It mentions Monday, 11 Ramadan, A.H. 641 (22nd February, A.D. 1244) as the date of the saint’s death.

GUJARAT

4. MISCELLANEOUS INSCRIPTIONS, DISTRICTS AHMADABAD AND MEHSANA -An important inscription from Patan assigns the construction of a mosque in A.H. 715 (A.D. 1315) to Maliku'l-Umara Ikhtiyaru'd-Daulat wa'd-Din `Ali, son of Muhammad Khamush (pl. L B); the builder does not find mention in the contemporary works, but he must have been a high provincial official of the Khalji period. Another early record, an epitaph from the same place, records that Aba Muqbil *Kamalu’d-Din Sa`id (?)* Irbili died in A.H. 721. The names of the deceased and his forefathers indicate him to be an Arab emigrant. An epitaph from Mehsana records A.H. 835 (A.D. 1431) as the date of the demise of 'Isa son of Khwaja. Another epitaph from Patan, states that Haji Adam, popularly known (or entitled) as Malik, died in A.H. 870(A.D. 1465). An epigraph from Kadi, was set up during the time of Shihab Khan-Shihabu’d-Din Ahmad Khan, governor of Gujarat under Akbar-and credits him as having built a mosque in the *khitta* of Kari (i.e. Kadi) in A.H. 991 (A.D. 1583). Two inscriptions from Patan, state that Mir Shamsu’d-Din built a gate of the city-wall; one of them also notes that the town had prospered during his tenure of office (faujdar-ship as we know from literary sources). An important record from Vijapur, mentions that the ruined `Idgah, originally constructed by Zafar Khan (later on Muzaffar I of Gujarat), was rebuilt in A.H. 1063 (A. D. 1652-53) by Mujahid Khan; the latter is identical with

Mujahid Khan Jalori, the Palanpur chief, who was governor of Vijapur, Mahi and Sabar-kantha *parganas*, during A.D. 1638-63, Another interesting inscription, from Patan, records that the La'l-Pol was constructed in A. H. 1140 (A.D. 1727), under the supervision of Mir Dargahi, the *darugha;* at that time, it further states, Khwaja Muhammad Amin was *the faujdar* and Mirza 'Ali Quli Baig, the *kotwal* of the town and the governor of the province was Nawwab Sarbaland Khan. Another record of the time of the said governor, also from the same place, assigns the construction of the city-wall in A.H. 1143 (A.D. 1730) to Shaikh 'Abdu's Sattar and Mehta Shambhu Das.

An important, but unfortunately much uncared for record, from Ahmadabad, registers the death of Mirza Muhammad Ja'far Najm-i-Thani, entitled Momin Khan, who expired in A.H. 1156 (A.D. 1743). It is the solitary relic enabling us to identify the last resting-place—a bare four-walled enclosure situated in an obscure corner of the city in a desolate condition with the epigraphical tablet broken into pieces—of this eminent Gujarat governor and the real founder of the line of the Cambay Nawwabs.

5. INSCRIPTIONS OF THE TUGHLUQS, DISTRICT MEHSANA.—A new inscription of [Firuz Shah Tughluq from Vijapur, recording the construction of a mosque in A.H. 771 (A.D. 1369-70), is interesting in that one panel of its marble tablet, which evidently contained the name of the builder, is refitted with a new panel, also of marble (pi. LA), inscribed with a modern record of the reconstruction of the mosque in A. H. 1275 (A.D. 1858-59), and of the construction of a water-tank in A.H. 1372 (A.D. 1952-53). Another record, from Kadi, refers to the construction of a mosque by Nasir, son of Firuz, in A.H. 786 (A. D. 1384).

6. INSCRIPTIONS OF THE MUGHALS, DISTRICT MEHSANA.—A bilingual record from Sidhpur dated in the time of Shah Jahan states that 'Askari (Ali Askari in the Nagari version) came to Sidhpur as a judge in A.H. 1055 (A.D. 1645-46) during the governorship of Aurangzeb, and finding that there was no market in the town, built one for the convenience of the public in the following year and named it *adl-ganj*. Another interesting bilingual inscription from Mehsana, represents the reign of Aurangzeb. It records that Karsandas, son of Birji *(i.e.,* Virji) who is described in the text as the best among the contemporaries, that is to say, a prominent local figure, constructed a step-well in A.H. 1085 (A.D. 1674). It further states that at that time, the town was held in *jagir* by Mirza Muhammad Baig, and the governor of the province (of Gujarat) was Nawwab Muhammad Amin Khan.

7. INSCRIPTIONS OF THE SULTANS OF GUJARAT, DISTRICT MEHSANA.—An inscription of Ahmad Shah I from Vijapur is a damaged record referring to the construction of a step-well in A.H. 833 (A.D. 1430) by Ishaq who is stated to be a kinsman (probably a son-in-law) of Malik Shaikh *alias* Darwish. Another undated but important epigraph from the same place and of the same king states that a Hindu building, appropriated by the Muslims after the establishment of their authority in the region, was destroyed after about sixty to seventy years by the Hindus and that it was rebuilt by Sarkhail Bahadur when he was granted the *iqta'* (fief) of the region. It also refers to Sarkhail as having improved the condition of the fief. A third inscription, from Patan, not only provides a new record of Ahmad Shah III, but also furnishes new information about the parentage of two prominent noblemen of the period, the Pauladi brothers, Musa Khan and Sher Khan. Inscribed by Khanjiu Abu Ahmad Ansari, its text records that Musa Khan Pauladi built the tomb of his late father Khan-i-A'zam 'Alawal Khan, at the instance of `Abdu'l-Latif, in A.H. 962 (A.D. 1555).

8. INSCRIPTION OF THE NAWWABS OF RADHANPUR, DISTRICT MEHSANA.—A new inscription of Nawwab Ghaziu'd-Din Khan Babi, from Patan, records that Sidi Muham mad Qasim supervised the construction of the gate of the fort of the town and designated it as Kokani, in A. H. 1177 (A. D. 1763-64).

MADHYA PRADESH

9. INSCRIPTIONS OF THE MUGHALS, DISTRICTS DEWAS AND VIDISHA.—An interest ing inscription from Dewas, dated A. H. 970 (A. D. 1562) in the reign of Akbar records that Nawwab Jan Quli Khan constructed a mosque, appointed Shaikh Gada'i as the leader of prayers and made a grant of the village Bajhana for his maintenance. This Shaikh Gada'i appears to be different from a famous namesake and contemporary, Shaikh Gada'i Kambuh, a poet and official, who enjoyed the patronage of Bairam Khan. An important record dated in the regnal year 50 (A. D. 1705) of Aurangzeb, from the same place, mentions that *the qanungo of the pargana of* Dewas, Shaikh 'Abdu's-Salam, constructed a mosque and a bridge and laid out a garden, when the place was included in the *jagir* of Prince Muhammad A'zam Shah. A historical record of Aurangzeb's son and successor, Shah 'Alam Bahadur I, whose very few inscriptions are known, comes also from Dewas (pl. LC). Dated in the first regnal year, A. H. 1119 (A. D. 1707) that is, within hardly a few months of his father's death, it records that a mosque was constructed, and a garden and a *pur a* (suburb) were founded, by the same Shaikh 'Abdu's-Salam, *qanungo,* when the *jagir* of the place was held by prince Jahandar Shah.

Two inscriptions from Basoda dated in the reign of Muhammad Shah assign the construction of mosques to Shaikh Islam Lahori and Shah Karimu'llah in A H 1133 (A. D. 1720-21) and 1146 (A. D. 1733-34) respectively.

10. INSCRIPTIONS OF THE TUGHLUQS, DISTRICT VIDISHA.—TWO epigraphs of simi-lar purport from Udayapur, dated in the reign of Muhammad bin Tughluq Shah record that Ahmad, son of Wajih, a servant of A'zam Malik, the *sarjamdar-i-khass,* construct ed a mosque under the superintendence of Fakhr Lahori in A. H. 739 (A. D. 1338-39). The texts of these inscriptions certainly do not refer to the destruction of a part of the temple, as pointed out in H. N. Dvivedi, *Gwalior Rajya-ke-Abhilekh* (p. 74, no. 555).

11. INSCRIPTION OF THE SULTANS OF MALWA, DISTRICT VIDISHA.—An inscription from the Moti-Masjid, Udayapur assigns the construction of the mosque in A H 894 (A. D. 1488-89) during the reign of Ghiyath Shah to Malik 'Ajab Sher, son of 'Atau'llah grandson of Jalal and great grandson of Banju Bhatti and *gumashta* of Udepur It further states that Khan-i-A'zam Sher Khan was the governor *(tnuqti*[1]*)* of Chanderi during the period, which shows that Udayapur lay in the *sarkar* of Chanderi.

12. MISCELLANEOUS INSCRIPTIONS, DISTRICT VIDISHA.—TWO crudely executed and damaged inscriptions from Udayapur, containing identical text, refer to the construc tion of the Motiya-Darwaza in A. H. 886 [?] (A. p. 1481-82); they seem to mention Maliku'sh-Sharq Malik, Mallu Sultani, a high official of the Malwa court.

MAHARASHTRA

13. INSCRIPTIONS OF THE MUGHALS, DISTRICTS AKOLA, AMRAOTI, AURANGABAD AND BIR.—Some epitaphs from Panchgawan, belonging to different members of a family which served the Mughals with distinction and loyalty, are historically interesting. Of them,

one records that Mir Muhammad Yusuf Niknam 'Alawi laid down his life in a battle fought by Jahangir's army against the Dakani marauders, in A. H. 1019 (A. D. 1610). The inscription further informs that Mir Niknam lost in addition to other kinsmen and servants, his eldest son, Mir Shah Husain, as is also stated on the latter's epitaph. Another epitaph mentions that Mir Faridun Husain, another son of Mir Yusuf, fell in the battle of Khirki fought between Jahangir's army and the Dakani *ghanims (i.e.,* Malik 'Ambar's army), in A. H. 1025 (A. D. 1616). An epigraph dated A. H. 1035 (A. D. 1626) from Mangrulpir, in the same District provides interesting information that Allahdad son of Sadr, received chiefship of Manglur, *i.e.* Mangrul, from Jahangir and that he was the grandson, on daughter's side, of Nawwab Fath Jang Khan. An inscription of the time of Shah Jahan, dated A. H. 1047 (A. D. 1637-38) from Panchgawhan, assigns the construction of a mosque to Mir Yusuf's son, Mir Sharafu'd-Din Husain, entitled Himmat Khan. His epitaph, from the same place, informs that Himmat Khan, was the *qala'dar* of Fathabad *alias* Kaij-Dharur, where he expired on the 15th Safar of the same year (29th June A. D. 1637). A damaged epitaph, also from Panchgawhan, refers to the deceased, another son of Mir Yusuf, *viz.*, Mir Muhammad Husain as *the faujdar* of Baglana and *qal`adar* of Mulher and states that he had died while on duty. Its date is lost.

An epigraph of Aurangzeb from Aurangabad, records the construction of a mosque in A. H. 1076 (A. D. 1665-66) by one of his officials Zainu'l-'Abidin. Another interesting record of the same monarch, from Amner in Amraoti District, states that La'l Khan, a servant of Raja Kishan Singh, was killed in the service of the emperor at Badhnur (now in Betul District) and was buried at Amner, in A. H. 1100 (A. D. 1689). It further adds that in the following year, for the merit of his soul, Husain constructed a tomb over his grave as well as a mosque, a tank and a garden. Another record, from Elichpur in the same district, credits 'Ali Mardan Khan, originally a Qutb Shahi nobleman, with the reconstruction of the Jami' mosque of the town and its water-tank and states that the work was carried out through the efforts of Shah Muhammad Baig in the regnal year 41 (A. D. 1696-97). Its text was written by Muhammad Hashim 'Ali Mardan Khani. Another epitaph, from Karanja in District Akola, also of the time of Aurangzeb, mentions Rustam Khan and Qadi Bashiru'llah, as *faujdar* and fief-holder of Karanja-Bibi, and records the erection of the Macca gate in the regnal year 42 (A. D. 1698-99). An important record of the same ruler, from Bir is dated A. H. 1115 (A. D. 1703-04). It records the construction of the fort of Bir along with the ditch and an 'Idgah and foundation of a suburb called Ghaziu'd-Dinpura by Haji Sadr Shah when the province (of Deccan) was governed by Nawwab Firuz Jang *(i.e.* Ghaziu'd-Din Khan).

An epigraph, of the time of Shah 'Alam I, from Ellichpur, states that Mirza Baig Khan constructed a mosque on the land on which there was previously a prison-house. A unique and the only record, so far found, of the reign of Jahandar Shah, who ruled for a very short time, is from Panchgawhan. It forms an epitaph of Bulaq Baig, a native of Shahjahanabad *(i.e.,* Delhi) and *faujdar* of the place, who died on the 6th Sha'ban of regnal year 1, A. H. 1124 (28th August A. D. 1712).

Two inscriptions from Ellichpur, representing the reign of Shah 'Alam II and dated A. H. 1180 (A. D. 1766-67) recorded that the governor of the province of Berar, Isma'il Khan, under orders from Nawwab Nizamu'd-Daula Bahadur Asaf Jah II, constructed the fort and the Hirapura gateway of the town, through Khushkhabar Khan, the *'amil* of the *pargana.*

14. INSCRIPTIONS OF ASAF JAHIS, DISTRICT AMRAOTI.—An inscription from Ellichpur records that Nawwab Isma'il Khan, governor of Berar, constructed the Malipura

gate at the instance of Asaf Jah II and that the work was completed in A. H. 1184 (A. D. 1770-71) under the superintendence of Khushkhabar Khan, *'amil* of the *pargana* of Ellich-pur. Another epigraph, from the same place, refers to the governorship of Burhanu'd-Daula and construction of some building in A. H. 1190 (A. D. 1776-77). Yet another inscription from the same place records the construction of an Imambara in A. H. 1236 (A. D. 1820-21) by Nawwab Namdar Khan Panni, who describes himself as a loyal officer *(fidwi)* of Nawwab Nizamu'1-Mulk Asaf Jah Bahadur and also as a member of the Mahdavi sect.

15. MISCELLANEOUS INSCRIPTIONS, DISTRICT AMRAOTI.—Four inscriptions from Ellichpur are quite interesting in that they refer to the construction of three arches (gates) in the tomb of the local saint Rahman Ghazi, between A. H. 1189 and 1192 (A. D. 1775-79) by Raja Modhaji, the Bhosla chief of Nagpur through Jham Singh and Shaikh 'Izzu'd-Din, as thanksgiving for the fulfilment of his wish.

16. INSCRIPTIONS OF THE NIZAM SHAHIS, DISTRICTS AMRAOTI AND BIR.—Two new records from Gawilgarh refer to the construction of a mosque for the merit of the king by Bahrain. The name of the king and the date are lost, but in view of an earlier known dated inscription of the builder at the same place, the present record should belong to the time of Murtada Nizam Shah. Another new and bilingual inscription, from Bir, refers itself to the rule of Burhan Nizam Shah.

17. INSCRIPTION OF THE TUGHLUQS, DISTRICT AURANGABAD.—A badly damaged but important record of Ghiyathu'd-Din Tughluq Shah, from Jalna, forms one of the few inscriptions of this king to be found south of the Vindhyas. It assigns the construc tion of a step-well in A. H. 724 (A. D. 1324) to a high nobleman, Muhammad, whose title and *alias* are illegible.

18. NIZAM SHAHI INSCRIPTIONS, DHARUR, DISTRICT BIR.—Three inscriptions dated A. H. 972 (A. D. 1564), 985 (A. p. 1577) and 1030 (A. D. 1620) were copied from Fath-burj, Shah-Burj and the mosque within the old fort. The first two records refer to the construction of two bastions, and the second one also bears the name of Murtada Nizam Shah of Ahmadnagar. The third inscription is connected with the construction of a reservoir during the time of Nizam Shah.

19. COPPER-PLATE CHARTER, DHARUR, DISTRICT BIR.—Dated in A. H 1186 (A D 1772), the copper plate in Persian records the grant of certain privilege's to one Warsu Motyaji Kumbhar for his services to the local people.

20. INSCRIPTION OF THE KHALJIS, DISTRICT BULDANA.—A fragmentary record from Rajpur refers itself to the reign of Qutbu'd-Din Mubarak Shah. The extant text only contains the titles of the king and the date A. H. 718 (A. D. 1318-19).

MYSORE

21. INSCRIPTION, DISTRICT TUMKUR.—An inscription from Sira records that the Jami' mosque of the town was built in A. H. 1067 (A. D. 1657).

RAJASTHAN

22. INSCRIPTIONS OF THE MUGHALS, DISTRICT NAGAUR.—A badly damaged in scription from Harsor contains the text of some order, issued in A.H. 1026 (A D 1617) by Jahangir, relating to the affairs in the *qasba* Harsor, mentioned therein to be in the *sarkar* Ajmer. An epigraph of Aurangzeb from Merta, recording the construction in A. H.

1073 (A. D. 1663) of a mosque by the Muslim community of shoemakers, recorded the emperor's titles as Amiru'l-Mu'minin Sahib Qiran-i-Thani Abu'z-Zafar.

23. MISCELLANEOUS INSCRIPTIONS, DISTRICT NAGAUR.—One more epigraph of Muhammad Ma'sum Nami of Bakkar, celebrated nobleman and literateur of Akbar's court, was found at Harsor. As usual in most of his inscriptions, it contains a Persian couplet of his, inscribed by him in A. H. 1014 (A. D. 1605). Another interesting record, from Merta, forms the epitaph of Shah Ibrahim Walidpuri (Walidpur in district Azamgarh), who is described as a kinsman of Akhund Mulla Mahmud Jaunpuri, a great savant of his time (died A. H. 1062 A. D. 1651-52). It states that the former had come to Merta on a private visit, but died there in A. H. 1098(A. D. 1686-87) in the house of Qadi Jalalu'd-Din, who also originally belonged to Jaunpur.

UTTAR PRADESH

24. INSCRIPTIONS OF THE MUGHALS, DISTRICTS BAREILLY, JALAUN, KANPUR AND MORADABAD.—An inscription of Akbar, now found at Sherpur in Moradabad District, but originally from Azampur nearby, assigns the construction of Jami' mosque to Ka-malu'llah 'Alam in A. H. 963 (A. p. 1555-56). It will be seen that it is dated in the first year of the emperor's reign. Another epigraph of the same emperor, from Kalpi in District Jalaun, assigns the construction in A. H. 970 (A. D. 1562) of a tomb, to Nawwab Nasir `Ali Sultan. Another record of Akbar, from Azampur in Moradabad District registers A. H. 985 (A. D. 1577-78) as the date of the death of Talib Khan, who is described a benevolent governor. An inscription from Mirza'i-Masjid at Bareilly records that the mosque was built by the famous Hakim 'Ainu'1-Mulk Shirazi in A. H. 987 (A. D. 1579-80), at the instance of emperor Akbar.

An epigraph of Jahangir, from Kalpi, states that a mosque and a well were constructed in A. H. 1015 (A. D. 1606-07) by Khwaja Yadgar, son of Khwaja Mas'ud Naqshbandi. The builder appears to be a brother of the more celebrated `Abudu'llah Khan Firuz Jang of Jahangir's court.

An epigraph from Makanpur states that Bahadur Khan, a celebrated official of Shah Jahan, built a rest-house in the shrine of Shah Madar in A. H. 1051 (A. D. 1641-42). According to another record from the same place, this nobleman constructed another building, now housing a *maktab* (school), in A. H. 1057 (A. D. 1647-48).

Among the inscriptions of Aurangzeb, an interesting epigraph from Kalpi states that Shaikh 'Abdu'l-Ghafur Zinjani, after assuming charge of the government of the city of Kalpi, became a regular visitor to the tomb of the saint Sayyid Muhammad and built a well there in A. H. 1081 (A. D. 1670-71). Two epigraphs from Rasulpur in Kanpur District, state that `Uthman Khan constructed a mosque in A. H. 1102 (A. D. 1690-91) in the village of Rasulabad, which is evidently the old name of Rasulpur.

25. INSCRIPTION OF THE MAMLUKS, DISTRICT KANPUR.—A new, but fragmentary epigraph, of the Mamluk period is inscribed on the stone-beam of the *hazira* at Bilhaur. It assigns the construction of an 'auspicious edifice'—evidently the tomb on which it is found, to the sultan.

26. MISCELLANEOUS INSCRIPTIONS, DISTRICT KANPUR.—An inscription from Makan-pur records that a gateway in the tomb of Shah Madar was constructed by Muhammad Nizam Madari in A. H. 859 (A. D. 1455). According to another epigraph, dated A. H. 873 (A. D. 1468), from the same tomb, one more gateway was erected by Amir Muhammad al-Hirewi who describes himself as a devout disciple of the saint. One more inscription from Makanpur records A. H. 986 (A. D. 1578-79) as the date of the completion of a bridge built by Shaham Khan (presumably Shaham Khan Jalair of Akbar's court).

III. NUMISMATICS AND TREASURE-TROVE[1]

GUJARAT

1. MUGHAL COINS, KATOSAN, DISTRICT MEHSANA.—A hoard of forty-three Mughal coins consisting of the issues of Jahangir, Shah Jahan and Aurangzeb was dis covered. A few of the coins bore the names of the mint-towns like Thatta, Ahmadabad, Surat and Lahore.

2. KSHATRAPA COINS, KAMREJ, DISTRICT SURAT.—About five thousand lead coins stored within a spouted vessel of copper were found on the left bank of the river Tapti. The legend *Damajasa* on them plausibly refers to some Kshatrapa ruler of western India.

KERALA

3. VIRARAYA FANAMS, TALUK S. WAYANAD, DISTRICT CALICUT.—Two hundred and six Viraraya *fanams* and two silver bangles were discovered.

MADHYA PRADESH

4. KSHATRAPA COIN-MOULDS, ERAN, DISTRICT SAGAR.—During the excavations at Eran fifteen coin-moulds of four Saka Kshatrapas, *viz.*, Vijayasena, Rudrasena II, Visvasimha and Rudrasimha, were unearthed. Two coin-moulds of Vijayasena are dated in Saka era 170 (A.D. 248) and those of Rudrasena II have three dates 180, 185 and 189, corresponding to A.D. 258, 263 and 267 respectively.

5. KUSHAN COINS, DISTRICT SHAHDOL.—A hoard containing seven hundred and fifty-seven copper coins of Vima Kadphises, Kanishka and Huvishka and some unidentified ones was discovered. The issues of Kanishka bear on the reverse Nana, Oesho, Oado, Mihira, Mao and Athsho, which are also common to the coins of Huvishka. But the obverse devices of the latter consist of the elephant-rider, seated cross-legged and reclining on couch types. -~

6. COIN OF RAMAGUPTA, DISTRICT VIDISHA.—A coin of Ramagupta bearing his name on one side and figure of a bull on the other was found at Vidisha.

MAHARASHTRA

7. MUGHAL COINS, TALUK MURTIZAPUR, DISTRICT AKOLA.—Four hundred and sixty-eight silver coins of Shah Jahan and Aurangzeb and a gold *muhr* of Akbar were discovered at village Dhangaon.

8. MUGHAL COINS, TALUK PARNER, DISTRICT AHMADNAGAR.—At Vadzire thirteen silver coins belonging to Jahangir, Aurangzeb, Rafiu'd-Darjat and Muhammad Shah were found.

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[1]Information from : 1 and 2, the Superintendent, Western Circle, 22, the Superintendent, Mid-eastern circle, and 23, the Superintendent, Northern Circle, of the Survey ; 3, the Director of Archaeology, Kerala State ; 4 and 6, Professor K.D. Bajpai ; 5, the Deputy Director of Archaeology and Museums, Madhya Pradesh State ; 7-16, the Director of Archives and Historical Monuments, Mahrashtra State ; 17 and 18, the Director of Archaeology, Mysore State ; 19, the Superintendent of Archaeology and Museums, Orissa State ; 20, the Department of Archaeology and Museums, Punjab State; and 21, the Director of Archaeology and Museums, Rajasthan State.

9. MISCELLANEOUS GOLD COINS, TALUK SRIRAMPUR, DISTRICT AHMADNAGAR.—Two issues of Shah 'Alam II, a Belgian Congo coin and seventy-six *putalis* or imitations of Venetian ducat (fake coins) were obtained from the village Naura.

10. MUGHAL COINS, PHULMARI, DISTRICT AURANGABAD.—Inside a broken jar of brass five hundred and seventy-two silver issues of Aurangzeb, Jahandar Shah, Farrukhsiyar, Kambakhsh, 'Ahmad Shah, Alamgir II and Shah 'Alam II were found with a copper coin of queen Victoria dated A. D. 1862.

11. SILVER COINS OF AURANGZEB, PAHUR, DISTRICT JALGAON.—Twenty-nine silver coins of Aurangzeb were obtained as treasure-trove from the village Fattehpur.

12. 'IMAD-SHAHI AND LATER MUGHAL COINS, TALUK KINWAT, DISTRICT NANDED.—Copper coins of Vyaghrambari type of the 'Imad-Shahis, silver rupees of Ahmad Shah, 'Alamgir II, Shah 'Alam II and Akbar II and a large number of post-Aurangzeb *fulus* were found in a hoard of four hundred and fifty-five coins.

13. VIJAYANAGARA AND BAHMANI COINS, TALUK MUKHED, DISTRICT NANDED.—A treasure-trove consisting of about eleven hundred and twenty-four coins was found at Yeoti. It contained Vijayanagar pagodas of Sri Pratap Devaraya, issues of Muhammad Tughluq and of the Bahmani ruler Ahmad Shah II in gold and Bahmani coins belonging to Hasangangu, Muhammad Shah I, Muhammad Shah II, Firuz Shah, Ahmad Shah I and Ahmad Shah II in silver, besides seven gold ornaments.

14. MUGHAL COINS, ITKUR, TALUK KALAM, DISTRICT OSMANABAD.—A hoard of eighty-two coins of Akbar, Shah Jahan, Aurangzeb and Shah 'Alam was reported. AH the coins with the exception of a single gold *muhr* of Shah Jahan were of silver.

15. MUGHAL COINS, SHIRDHANE, TALUK KALLAM, DISTRICT OSMANABAD.—Thirty-seven silver coins of Shah Jahan, Aurangzeb, Farrukhsiyar, Muhammad Shah, Ahmad Shah and Shah 'Alam II were found.

16. MISCELLANEOUS COINS, TALUK WALVA, DISTRICT SANGLI.—Coins of Humayun Shah, Muhammad Shah III and Mahmud Shah of the Bahmani dynasty, Aurangzeb and Chhatrapati Shivaji, besides issues known as money of Bombay, dated A. D. 1790, were discovered at Kameri.

MYSORE

17. COINS OF AUGUSTUS, DISTRICT BANGALORE.—Silver coins of the Roman emperor Augustus numbering two hundred and fifty were recovered from workmen by the police at the HAL airport. The spot also yielded Russet-coated Painted Ware with painted designs and the megalithic Black-and-red Ware.

18. VIRARAYA FANAMS, DISTRICT MYSORE.—Three hoards of gold *fanams* of Viraraya, each consisting of fifty-five, sixty-three and sixty-six coins, were discovered at Marthahalli, Sirigodu and P. G. Palyam respectively.

ORISSA

19. GOLD COINS, DISTRICT BALASORE.—The State Museum acquired a hoard of thirty gold coins of the Ganga period.

PUNJAB

20. MUGHAL COINS, DISTRICT AMBALA.—Three hundred and thirty-nine coins of Aurangzeb, Bahadur Shah and Shah 'Alam came to light at Maulana.

RAJASTHAN

21. LATE MUGHAL COINS, NAL, DIVISION BIKANER.—One hundred and seventy Late Mughal silver coins were found.

UTTAR PRADESH

22. ANCIENT AND MEDIEVAL COINS, TAHSIL MARIAHU, DISTRICT JAUNPUR.—A punch-marked, a cast and an Ayodhya (tribal) coin with a few Muslim coins were found at the village Nigoh.

23. RAJPUT COINS, DISTRICT JHANSI.—A hoard of three hundred and eighteen coins, mostly of debased silver, was discovered at Dariyapura, a suburb of Jhansi city. -is, They belong to a king named Mahipala and the Chandella ruler Madanavarman and bear a two-or three-lined legend on the obverse and Lakshmi on the reverse.

IV. OTHER IMPORTANT DISCOVERIES

ANDHRA PRADESH

1. MEDIEVAL TEMPLES, GODISALA, DISTRICT KARIMNAGAR.—Shri M. Sivayya discovered three Saiva temples at Godisala. An inscription found in one of the temples gives a date of Saka 1151 (A.D. 1229) of the period of Kakatiya Ganapatideva and also mentions his chief minister. At the same place was also noticed a soapstone image of Virabhadra ascribable to the fourteenth century.

2. EARLY HISTORICAL SITE, MUNAGACHERLA, DISTRICT KRISHNA.—Shri K. Raghavachary discovered a historical site at Munagacherla in Taluk Nandigama. From surface-finds it would appear that the site had been in continuous occupation from the third to the sixteenth century A.D.

BIHAR

3. MICROLITHS, DISTRICT RANCHI.—Shri B. K. Sharan found microliths at Barudih, Budhudih, Udhuru in Police-station Khunti and at Diankel and Torpa in Police-station Torpa.

4. ASURA SITES. DISTRICT RANCHI.—Shri B. K. Sharan found Asura habitation-sites at Budhudih, while Dr. N. R. Banerjee located a similar site at Chiraundi.

5. ANCIENT SITE, DISTRICT SARAN.—An extensive mound, locally known as Aphaurgarh (also called `Aphaur-Deval') containing remains of brick structures and a stone gateway was found by Shri B. N. Prasad at Aphaur.

6. STONE SCULPTURE, DISTRICT SARAN.—A black-stone image of four-armed Vishnu, belonging to *circa* tenth-eleventh century, was noticed by Shri B. N. Prasad at Khaira.

GUJARAT

7. RED POLISHED WARE SITES, DISTRICTS BHAUNAGAR AND JUNAGADH.—Shri J. P. Joshi, assisted by Sarvashri T. V. G. Shastri and K. P. Gupta, discovered a large predominantly Red Polished Ware site on the slopes of the Talaja caves at Talaja in District Bhaunagar and another site of the same complex on the eastern slopes of the Dhank caves in District Junagadh.

8. STONE AGE SITES IN DHARAMPUR REGION, DISTRICT BULSAR.—Shri D. B. Chitale discovered rolled Early Stone Age tools with flakes of a later facie from Avadha, Barumal, Mohpada, Rajpuri and Sidumbar on the river Man and Amba and Veravel on the river Tan.

9. MEDIEVAL TEMPLE, DISTRICT PORBANDAR.—Shri M. P. Vora discovered a pre-Solanki temple near Bileshwar in Parda Hills and at Sitamadhi on the west coast.

KERALA

10. ROCK-CUT CAVES, DISTRICT CALICUT.—The Directorate of Archaeology of the Kerala Government located rock-cut caves of a rectangular type with central pillar, benches and side-opening along with the usual Black-and-red Ware at Mayppayur, Quilandy, and of a different type with openings close to each other, suggesting a double entrance for multichambered caves, at Nagaparambu, Nattuvattom Amsom, in Taluk Tirur.

MADHYA PRADESH

11. MEDIEVAL SCULPTURES, HOSHANGABAD.—Professor K. D. Bajpai discovered sculptures representing Hari-Hara, Varuna, Vishnu, Agni and Kankali in Hoshangabad town itself. Some of these were found to bear significant iconographic traits.

12. MEDIEVAL SCULPTURES, DISTRICT RAJGARH.—Professor K. D. Bajpai dis covered at Sarangpur, sculptures representing a four-handed statue of Brahma, a Jaina goddess and a mother and child, all ascribable to the tenth-eleventh century. He also noticed a *nagi* image at Kalipith, over 12 km. north of Rajgarh. The upper half of the image with hoods behind the head represents human figure, whereas the lower part is that of a snake.

13. EARLY STONE AGE TOOLS, DISTRICT SAGAR.—Shri M. D. Khare and Shri C. B. Trivedi discovered Early Stone Age tools comprising handaxes and cleavers, all in quartzite, at Amarmow, Kani-kheri and Shahgarh in the valleys of the Lanch, the Silpat and the Bila in Tahsil Banda.

14. MEDIEVAL SCULPTURES, DISTRICT SAGAR.—Brahmanical and Jaina sculptures belonging to the eleventh-twelfth century (Chandella period) were noticed at Deori by Shri M. D. Khare and Shri C. B. Trivedi, notable among them being a *naga,* a *nagi* and a *sapta-matrika* panel.

15. EARLY, MIDDLE AND LATE STONE AGE TOOLS, DISTRICT SEHORE.—Early and Middle Stone Age tools, all in quartzite, were collected by Shri C. B. Trivedi from various localities of Bhopal, including the area around Vidhayaka Vishram Griha and Raj Bhawan, Tantya Tope Nagar and Arera Hills. Shri M. D. Khare noticed similar tools on the Shamla Hills, also in Bhopal.

16. EARLY AND MEDIEVAL SCULPTURES, DISTRICT VIDISHA.- Shri M.D. Khare and Shri C.B. Trivedi recovered two yaksha torsos (circa second-first century B.C.) from ancient habitation on the southern bank of the Bes, between Ganeshpura and Bes river-bridge (pl. LI A and C).

An abacus crowned by an inverted lotus of about the second century B.C. (pl. LI B) was discovered by Shri C.B. Trivedi in a field, about 1 km. From the Heliodoros pillar, on the track leading to Amachhawar. Besides, a fragment of a sapta-matrika panel, head of a Jaina tirthankara and miscellaneous sculptures of the Paramara period were also collected.

17. EARLY STONE AGE SITES, DISTRICT WEST NIMAR.-Early Stone Age tools were discovered by Shri C.B. Trivedi at Bedia and Raver-Kheri, the latter on the bank of the Narmada.

MYSORE

18. MEDIEVAL TEMPLE, DISTRICT CHITRADURGA.- The Director of Archaeology, government of Mysore, cleared a mound at Lokikere exposing a temple with beautiful outer walls with niches, pilasters, etc. According to the inscription, newly discovered there, the temple was constructed by the Pandyas of Uchchangi in about the twelfth century.

19. BRICK STRUCTURE, DISTRICT NORTH KANARA.- The Director of Archaeology, Government of Mysore located a brick structure at Banavasi. The bricks and the associated finds including pottery indicate that the structure might have belonged to about the first-second century A.D. Most of it, however, has now been destroyed as a result of the activities of the local Public Works Department.

20. SCULPTURES, DISTRICT SHIMOGA.—TWO pieces of sculpture representing a Parsvanatha figure with its finely-carved *prabhavali* and a fine figure of a seated *yaksha*, both belonging to the Hoysala period, were noticed at Bhadravati by the Director of Archaeology, Government of Mysore.

ORISSA

21. MEDIEVAL TEMPLES, DISTRICT KORAPUT.—The Director of Archaeology, Government of Orissa, discovered two temples known as Nilakanthesvara and Mallikesvara at Padmapur in Gunapur Sub-division. The former, which was the smaller of the two, closely resembles the Sikharachandi temple of Patia in District Cuttack and is considered as one of the earliest temples of Orissa, assignable to the last part of the Gupta period. A small inscription of the seventh-eighth century A.D. mentions the name Dharmakirti. The larger temple belongs to the ninth-tenth century A.D.

PUNJAB

22. VISHNU IMAGE, DISTRICT FEROZEPORE.—Shri K. N. Dikshit noticed a standing image of Vishnu of the tenth-eleventh century (pi. LII A) at Velore, 9 km. from Ferozepore on the Ferozepore-Jira road.

23. EARLY HISTORICAL SITE, DISTRICT LUDHIANA.—Shri K. N. Dikshit noticed grey ware sherds varying in fabric from medium to coarse, Sunga-Kushan red ware and medieval pottery in the vicinity of the railway-station at Dhandari-Kalan, 8 km. east of Ludhiana on the Grand Trunk Road.

24. PAINTED GREY WARE SITE, DISTRICT PATIALA.—On information from Shri G. L. Sud of Gandhi Study Circle, Patiala, Shri H. K. Narain explored an ancient site at Seal, about 14 km. east of Patiala, and found sherds of the Painted Grey Ware and Sunga-Kushan red ware.

25. HARAPPAN SITE, DISTRICT SANGRUR.—An ancient mound at Rohira, 31 km. south of Ludhiana on the Ludhiana-Hissar road, brought to light by Shri Raghbir Singh, was further explored by Shri K. N. Dikshit. The mound was found to contain Harappan pottery, besides grey, Sunga-Kushan red and medieval wares.

RAJASTHAN

26. EARLY MEDIEVAL SCULPTURE, DISTRICT BHILWARA.—Shri R. C. Agrawal discovered a rare and unique early medieval image of Gaja-Lakshmi at Dhod wherein Krishna and Balarama are shown as attendants in an identical manner as at Amjhara in District Dungarpur.

27. EARLY MEDIEVAL TEMPLES AND INSCRIPTIONS, DISTRICT BHILWARA.—Shri R. C. Agrawal discovered several medieval temples and inscriptions in the Shahpura and Jahazpur regions. Amongst them, the Siva temple at Dhod, over 12 km. from Jahazpur, is an important edifice of the twelfth century, containing a brick *sikhara* and three dated inscriptions of *Vikrama-samvat* 1225, 1226 and 1228, inscribed on its various walls.

28. MEDIEVAL ANTIQUITIES, DISTRICT KOTA.—Shri M. M. Shastri surveyed the area around Gangebi, 96 km. south of Kota, to be submerged as a result of the construction of Rana Pratap Sagar Dam, and noticed a group of medieval temples of the ninth-tenth century. He also found about fifty sculptures of different gods and goddesses which were later removed to the Kota Museum.

Ml DGA/67—6

29. MICROLITHIC SITE, LANGER, DISTRICT NAGAUR.—Shri N. M. Ganam discovered microlithic site adjacent to sand-dunes at Langer. The site yielded parallel-sided blades, mainly on chert, chalcedony and jasper.

UTTAR PRADESH

30. MEDIEVAL SCULPTURES, DISTRICT AGRA.—Shri J. P. Gupta found loose Brahmanical sculptures at Chainkura, Douli, Kiraoli, Mori and Nahchani in Tahsil Kiraoli.

31. PAINTED GREY WARE SITE, DISTRICT AGRA.—Shri J. P. Gupta reported the discovery of two Painted Grey Ware sites at Bakanda-khera and Vidyapur in Tahsil Kiraoli.

32. PAINTED ROCK-SHELTER, DISTRICT AGRA.—Shri J. P. Gupta discovered two rock-shelters at Jharauti in Tahsil Kiraoli containing crude geometrical paintings in red colour.

33. PAINTED GREY WARE SITE, BULANDSHAHR.—Shri K. N. Dikshit and- Shri R. P. Sharma explored the eastern standing stumps of the Balai Kot or upper fort-mound underlying the Khurja bus-stand. Besides the Painted Grey Ware, it yielded grey, Sunga-Kushan red and Muslim wares.

34. MEDIEVAL SCULPTURES, DISTRICT FATEHPUR.—Shri L. M. Wahal reported the discovery of some medieval sculptures from village Shahjahanpur.

35. MEDIEVAL TEMPLE AND SCULPTURE, DISTRICT HAMIRPUR.—Shri L. M. Wahal reported the existence of a ruined temple at Barwara with large Jaina images of Vimalanatha, Santinatha and Neminatha. The pedestal of the colossal image of Santinatha contains a short inscription.

36. MEDIEVAL SCULPTURES, DISTRICT KANPUR.—Shri L. M. Wahal reported the discovery of a large image of Surya at Magrasa. Other, largely fragmentary, sculptures were found lying around it. Medieval sculptures were also noticed at Rahans. The pedestals of two broken images here contain short defaced inscriptions in Devanagari, one of them mentioning a date *samvat* 1320.

37. NORTHERN BLACK POLISHED WARE AND MEDIEVAL SCULPTURES DISTRICT KANPUR.—Shri L. M. Wahal noticed sherds of the Northern Black Polished Ware at Bhadsa. Some late medieval sculptures were also seen at the site.

38. NORTHERN BLACK POLISHED WARE, DISTRICT LUCKNOW.—Shri S. B Singh reported the discovery of the Northern Black Polished Ware from Pirthinagar and Nazirpur.

39. EARLY SCULPTURES, DISTRICT LUCKNOW.—Shri S. B. Singh noticed some early sculptures in the Gupta tradition at Dharampur.

40. MEDIEVAL SCULPTURES, DISTRICT LUCKNOW.—Shri S. B. Singh reported the discovery of medieval sculptures from Karaundi, Guman-Khera and Madhopur.

41. PAINTED GREY WARE SITE, DISTRICT MUZAFFARNAGAR.—Shri M N Deshpande picked up pottery ranging from the Painted Grey Ware to medieval ware at Niyamu, 13 km. north-west from Muzaffarnagar, on the bank of river Hindon Fine sculptures of Varaha (pi. LII B), Balarama, etc., brought to the Survey's notice by local residents were also examined. The sculptures belong to *circa* tenth century A. D.

42. KUSHAN COINS AND NORTHERN BLACK POLISHED WARE DISTRICT T INN An _ Shri L. M. Wahal noticed sherds of the Northern Black Polished Ware at Pakara-Buzurg and Panhan. Some copper coins of the Kushans were also found in the possession of the villagers from Pakara Buzurg, who reported that they had been picked up locally.

43. STONE SCULPTURE, SARNATH, DISTRICT VARANASI.—A stone image of a female figure iii late Gupta style (pl. LI D) was obtained from one of the *stupas* which was being made watertight.

WEST BENGAL

44. MICROLITHS, DISTRICT BIRBHUM.—Shri V. Sen noticed microliths at Govindapur, Labpur, Monachitra and Sivan.

V. MUSEUMS

1. RAJPUTANA MUSEUM, AJMER.—The newly-converted galleries of the Museum were modernized with the help of grants from the Government of India. In the gallery of inscriptions racks, projecting about 22 cm. from the wall, were fixed in order to display inscriptions at eye-level.

2. ARCHAEOLOGICAL MUSEUM, AMARAVATI—Most of the antiquities lying in the museum-shed and reserve-collections were shifted to the newly-constructed museum-building. Three hundred and fifty sculptures were given chemical treatment.

3. ARCHAEOLOGICAL MUSEUM, AMBER.—More than a dozen sculptures were added to the collection. All the galleries of the Museum were fitted with wall-cases, and material from the excavations at Bairat, Nagar, Rairh and Sambhar was put on display. The reserve-gallery of the excavated antiquities was re-arranged in the store-rooms.

4. MUSEUM AND PICTURE-GALLERY, BARODA.—A feature of the year was an exihi-bition organized by the Museum for the UNESCO International Campaign for . Monuments. The exhibition included large-size photographs and oil-paintings of the monuments of Gujarat. Films on monuments and public lectures by eminent scholars were arranged. In the room for prehistoric antiquities a special display of Stone Age implements and Indus Valley seals was put up. Six selected sculptures were displayed in two specially remodelled show-cases. The acquisitions for the year included: two Middle Stone Age implements from Orsang, Sankheda, Gujarat; a marble frieze of a Jaina deity of the twelfth century from Gujarat, and a bronze image of Parvati, of the eighteenth century also from Gujarat.

The laboratory for preservation carried out an analytical study of copper objects from Rojdi, a Late Harappan site in Gujarat. The laboratory also undertook the chemical cleaning and treatment of fourteen hundred silver Kshatrapa coins and seventy-five copper coins from the Watson Museum, Rajkot; fifteen copper and two silver objects from the Department of Archaelogy, Gujarat State/ Rajkot; and twenty-nine metal and six stone images from the Baroda Museum.

5. STATE MUSEUM, BHARATPUR.—The notable acquisitions made by the Museum f included thiry-three sculptural pieces belonging to early and late medieval periods from Dholpur and Bayana, and thirty-three paintings of different Rajasthani schools, *e.g.*, Alwar, Bundi, Bikaner, Jaipur and Jodhpur.

The Archaeology, Paintings and Armoury Sections of the Museum were provided with curtains and steps were alsojaken to prevent the paintings from being exposed to direct light.

6. STATE MUSEUM, ORISSA, BHUBANESWAR.—The Manuscript Library of the Museum was further enriched by an addition of four hundred and sixty-eight manuscripts, which were purchased, and another two hundred and eighty-five, received as presents. Two cannons and images of Surya from Cuttack carved in chlorite and of Parvati and Karttikeya from Bhubaneswar were added to the collection.

7. ARCHAEOLOGICAL MUSEUM, BIJAPUR.—The woodwork in the Museum was repainted with suitable shades of colour. The show-cases displaying Chinaware, manuscripts, coins, Bidri and other metal wares were repolished and casement-cloth was provided.

Four of the niches in the museum-building were provided with wooden frames and glass shutters and were used for the display of procelain jars and Jaina sculptures. The collection of paintings was sent to the Archaeological Chemist at Dehra Dun for chemical treatment. The work of preparation of labels for the exhibits and charts is in progress.

8. GANGA GOLDEN JUBILEE MUSEUM, BIKANEER.—The collection was considerably enriched by the addition of two hundred and seventy-seven exhibits, which included several Rajasthani miniature paintings, old Rajasthani textiles, carved bricks and stones, Late Mughal coins, ivory and carved hide objects, etc.

Considerable progress was made in the re-organization of the galleries. In the Archaeological Section, the Gupta terracottas from the Ghaggar region were displayed at eye-level in large-sized glass show-cases equipped with artificial lighting. Preparation of an exhaustive catalogue was also undertaken.

The Museum took part in the UNESCO's International Campaign for Monuments by organizing exhibitions, arranging talks on cultural subjects and screening documentaries on archaeological subjects.

9. PRINCE OF WALES MUSEUM, BOMBAY.—The setting up of a new gallery for forty select Indian bronzes was taken up. Suspended and built-in show-cases and show cases with sliding glass doors, all fixed at a convenient height, were put up in this gallery. The upper portion of the wall-panel of the gallery was covered with plywood and the lower portion with cement sheets. For diffused lighting fluorescent tubes were covered with ground glass. The work in the gallery was almost complete and was to be opened shortly.

Index-cards of all the stone sculptures were prepared. The acquisitions during the year included ten stone sculptures, three bronzes including a Pala Vishnu (pl. LIII A) and Mahishamardini from Orissa (pl. LIII B) and twelve terracotta objects.

10. ASUTOSH MUSEUM OF INDIAN ART, CALCUTTA.—The Museum added to to its collection over two thousand objects of art and antiquity datable from the sixth century B.C. to the early medieval period as a result of its extensive programme of exploration and collection in lower and central Bengal, particularly in the neighbourhood of Calcutta and the western part of the state, apart from the excavation at Chandraketugarh, 24-Parganas (above, p. 52) The repertoire comprised terracotta, stone, wood, bronze, coins, ivory, paintings, textiles and objects of folk-art.

In continuation of the previous year's exploration at Maita, Bagridihi and adjoining area in the Silavati valley in District Midnapore, West Bengal, Shri Sambhunath Ghatak collected a large number of geometric and non-geometric microliths. Three neolithic polished celts were also collected by Shri Atul Bhowmic from District Singhbhum, Bihar.

Exploration of Buro-Burir-tat and its neighbourhood m Plot G of the Sundarbans by Shri Somnath Bhattacharya, Shri Dilip Kumar Ray Shri Adyanath Mukherjee and Shri Taran Kumar Biswas brought to light some painted Kushan and Gupta pottery, a pair of archer type of gold coins of Samudragupta and a rare stone Sahasra-linga image of *circa* eleventh century.

From fortified city-site at Kotasur, 34 km. to the north-west of Sun, Shri C. R. Roychoudhury collected terracottas, cornelian and agate beads and fragments of medieval stone sculptures.

Three hundred cast copper coins, more than two hundred beads of precious and semi-precious stones, fragmentary bowls and dishes in grey ware and terracotta

animal-figurines of the Sunga-Kushan period from Harinarayanpur, and black-slipped fragments of terracotta elephant, terracotta toy-cart, and a few cast copper coins from Hatheria near Harinarayanpur, were obtained by Shri Somnath Battacharya.

Shri Binoy Krishna Biswas collected from Chandraketugarh terracottas (pi. LIV A) , inscribed seals and sealings, coins and jewellery pieces, of the third century

B. C. to the sixth century A. D.

All of them were added to the collection of the Museum.

The Museum also acquired through the Customs Office, Government of India, a large number of South-east Asian antiquities comprising forty-one bronze, brass, silver and ivory objects. Noteworthy among them were eleven small gilt bronze Siamese Buddha heads (pi. LIV B), ten pieces of Siamese jewellery, a Burmese Buddha, Nepalese bronze Tara and Vajrapani and Tibetan bronze Maitreya and Kubera.

The Museum got on loan from the Director General, Archaeological Survey three sandstone Gupta architectural pieces from Sarnath. A slightly-damaged Vishnu of black basalt and a votive temple of *circa* fifteenth century, from Malda and Bankura respectively, were also acquired.

The Museum acquired by purchase and gift a twelfth-century bronze miniature Vishnu of Bengal; a fourteenth-fifteenth-century four-handed seated Narasimha, beautifully arrayed in *jatabhara,* from Orissa; and two eighteenth-century tribal bronzes from Garbeta, Midnapore.

Among other notable acquisitions mention may be made of three Orissan manuscripts including a set of nineteen illuminated pages of a unique palm-leaf manuscript of about A. D. 1600 with thirty-five illustrations, a palm-leaf *Ramayana* manuscript of the seventeenth century, with twenty-four illustrations and an eighteenth-century palm-leaf manuscript of the *Pancha-sayaka* with thirty-three illustrations by Gopala Bhanja. Seven pieces of Orissan ivory fillets of the fifteenth-sixteenth century, skilfully perforated with amazingly-moving designs of geese, animals and floral arabasque of exquisite beauty (pi. LIV C) and two painted wooden life-size *dvara-palas* of the eighteenth century wearing Maratha costumes, from Ganjam, Orissa, were also remarkable additions.

Certain antiquities from Rajasthan were also acquired by the Museum. These include, besides a 40-cm. rounded terracotta Ganesa from Jaisalmer, datable to the sixteenth-seventeenth century, popularly known as *vyantara-derata* by the Ganapatya sect in northern India, a set of three illuminated Jaipur *jata-patra* scrolls of early eighteenth century, and two miniatures portraying a strident Chandi and a *Goshtha-lila* from Bundi and Udaipur respectively, datable to early eighteenth century.

11. INDIAN MUSEUM, CALCUTTA.—The collection was enriched by the acquisition of four hundred and twenty-four coins belonging to diflerent periods of Indian history, one of them unique, being the issue of Jahangir as Badshah Salim, two sculptured stone architectural pieces from Asansol {*circa* eleventh century), two stone images of Vishnu (pi. LVII A) from the Sundarbans area of West Bengal (*circa* twelfth century), an inscribed clay seal from Kausambi (third century), a bronze image of Sukhavati-Lokesvara from Nepal, dated *Nev/ari-samvat* 943-944 (A. D. 1823-1824), and two stone sculptures (*circa* seventh century) from Sarnath, received on loan from the Director General, Archaeological Survey of India.

The Museum also received as gift from the British Museum, London, an interesting group of ten antiquities from Egypt. Of these, three Ushabti figurines in blue faience, one of which is ascribable to the Twenty-first Dynasty (*circa* 1000 B. c.) and the other two to the Twenty-sixth Dynasty (*circa* 600 B.C. (pi. LV) require special mention.

The coin-collection (including gems and other valuables) was re-arranged in a new Coin Room on the ground floor of the building.

A new Bronze Gallery (pl. LVI) was opened; a representative number of Indian bronzes, formerly kept in Reserve and Sculpture Galleries, were exhibited there in new types of wall-cases, grouped on a chronological and regional basis. Some of the large pieces were displayed on free-standing wooden pedestals and specially-made glass cases.

To enhance the quality of display, the Amaravati Bay of the Sculpture Gallery was re-modelled on modern lines, while the background colours, wall and show-cases of the Mathura and Bhumara Bays and Gandhara Gallery were changed in order to bring about a greater visual effect of the displayed antiquities. The long and continuous brick pedestals along the walls of the Gandhara Gallery were being replaced by built-in wooden-cases to take the smaller sculptures interspaced with individual figures of the Buddha and Bodhisattvas.

The Bharhut Gallery was repainted and was relieved of its congestion by the dismantling of the brick bench along the walls. The coping-pieces exhibited on this bench as well as the worn-out plaster casts of the sculptures from Udayagiri (Orissa) caves and gateways of Stupa 1 of Sanchi were removed from display. Three Mauryan sculptures, formerly displayed on the walls of this Gallery, were removed to the Entrance Hall, where they were displayed on free-standing wooden pedestals.

Work is in progress for the re-opening of the Prehistoric and Protohistoric Gallery in the large hall on the eastern wing of the ground floor of the Museum building.

A photographic exhibition of outstanding monuments of India was organized in the Museum as part of the UNESCO's International Campaign for Monuments.

12. BHURI SINGH MUSEUM, CHAMBA.—Eighteen Pahari paintings, two drawings, a stone sculpture and a large number of miscellaneous objects of decorative arts and photographs and slides of Indian monuments, sculptures and paintings were added to the collection. An inscribed copper Mukha-linga (?) belonging to the nineteenth century was a notable acquisition.

The Museum participated in UNESCO's International Campaign for Monuments and organized talks on and a small exhibition of photographs of monuments.

13. ARCHAEOLOGICAL CELL, STATE MUSEUM, CHANDIGARH.—The Museum purchased sixty-four paintings and fourteen sculptures.

14. CHANDRADHARI MUSEUM, DARBHANGA.—The acquisitions included fifty old guns, fifteen paintings of the local Mithila school, thirteen old documents, carved Burma teakwood palanquin, two ancient manuscripts and an embroidered Kashmiri shawl.

15. ARCHAEOLOGICAL MUSEUM, RED FORT, DELHI.—Four renovated show-cases with Mughal *farmans* and *sanads* and two re-modelled wall-cases with pottery and arms were put up in the paintings and main galleries respectively of the Museum. The work of cataloguing eleven thousand coins in the Museum is in progress.

16. ASSAM STATE MUSEUM, GAUHATI.—The Museum added to its collection a stone image of Surya with an inscription datable to the ninth century, a stone *amalaka*, a copper-plate charter with an inscription in old Assamese of Saka 1314 recording a land-grant by a ruler Satyanarayana to a Brahmana Narayana, and thirty-one silver rupee coins belonging respectively to Asaf-Jahi dynasty, William IV and Queen Victoria.

The Museum re-arranged the Archaeological Section on the occasion of the All-India Oriental Conference.

17. STATE MUSEUM, HYDERABAD.—The collection of the Museum was further enriched by the addition of two sets of copper-plates, respectively from Mallavaram and from Srisailam, two Buddhist marble images and a few Nepalese bronzes of Manjusri, Tara and Ayalokitesvara, and a number of coins representing various dynasties of the Andhra region. ;

18. CENTRAL MUSEUM, JAIPUR.—The re-organisation was nearly completed in almost all the lower galleries, excepting repainting and relabelling work which is still in progress. Auditory devices were introduced in the Central Hall.

19. SARDAR MUSEUM, JODHPUR.—Among the notable acquisitions were medieval sculptures of Trivikrama, horse-rider, Ganesa, etc. The Paintings and Archaeological Galleries were re-organized. The Museum took part in UNESCO's International Campaign for Monuments.

20. ARCHAEOLOGICAL MUSEUM, KOLHAPUR.—The Museum received as gifts or by purchase idols of Vitthala and Rukhmai and pieces of Bidri and Nirmal metal ware.

21. MUSEUM AND SARASWATI-BHANDAR, KOTA.—Forty-three sculptures from the site of Rana Pratap Sagar Dam near Kota, including the figures of Vishnu in various forms, Ganesa, *nava-grahas,* Siva, Lakshmi and Durga, and architectural pieces were obtained,

22. STATE MUSEUM, LUCKNOW.—The archaeological material from the Harappan times to the historical period was shifted to the north wing and the new building. The sculptural pieces, particularly of the Gandhara, Gupta and Bengal schools, Copper Hoard implements, terracottas, etc., were arranged chronologically in the different show-cases. The objects were given descriptive labels with brief connected history and maps.

The notable acquisitions during the year include Sunga-Kushan and Gupta terracotta plaques, animal and human figurines and yoked carts; a stone sculpture of the seventh-eighth century; ivory figurines; pottery; and beads and pendants. Interesting in the last group are the red-stone pendants decorated with *svastika* and *nandipada* symbols.

23. FORT ST. GEORGE MUSEUM, MADRAS.—With a view to improving the display, the objects in the galleries were re-arranged. A special exhibition of photographs was organized in November 1964 as a part of the UNESCO's International Campaign for Monuments.

24. GOVERNMENT MUSEUM, MADRAS.—The acquisitions during the year included, among others, nineteen bronzes from Districts Ramnad and Thanjavur as treasure-trove finds and three copper-plates as gift.

The work of card-indexing of the exhibits in the National Art and Bronze Galleries was completed and labelling was started.

Anew gallery of Buddhist antiquities, housing the relics from Peddamudiyam, Sankaram and Amaravati and reduced scale-models of excavated sites from Nagarjuna-konda, was opened to synchronize with the UNESCO's International Campaign for Monuments.

25. MUSEUM OF ARCHAEOLOGY, MATHURA.—The Museum acquired twenty-six objects, of which the following deserve mention: a fragmentary and mutilated image probably forming part of a bigger panel of four-handed Varaha of about the third century (pi LVIIC); a sculptured railing pillar of red sandstone of the Kushan period (pl.LVII B) an inscribed pedestal of a standing Buddha containing a mutilated epigraph of the time

of Kumaragupta I found in the vicinity of the Huvishka monastery; terracotta figurine of mother-goddess, a Sunga terracotta plaque; and a lamp with an effigy of Yaksha over it and a Gupta panel showing flying *vidyadharas.*

26. ARCHAEOLOGICAL MUSEUM, NAGARJUNAKONDA.— As part of the organiza-sion of the new Museum on the hill-top, seventy large sculptures and about two hundred small objects were selected for display in the galleries. Of these, larger sculptures were arranged on movable wooden pedestals.

About one hundred plaster casts showing details of the excavated monuments and a large-scale model of the valley locating various sites is nearing completion. The statues of Buddha and Hariti and the moonstone, from the Simhala-Vihara, stadium and university sites respectively, were removed to the Museum and were replaced by cement casts in the respective sites.

27. CENTRAL MUSEUM, NAGPUR.-^The Museum held its three-day centenary celebrations. It also organized an exhibition of photographs in response to the UNESCO's International Campaign for Monuments. Two stone inscriptions from Akola and Pauni Districts were added to the collection (above, p. 58)

28. ARCHAEOLOGICAL MUSEUM, NALANDA.—New show-cases were introduced in the Bronze Gallery for the display of sculptures on individual brackets.

29. NATIONAL MUSEUM, NEW DELHI.—The Museum received as gifts from the University Museum, Cambridge, stone implements of the Early and Late Stone Ages, collected from different sites in Europe, Africa and Pakistan and purchased four Copper Hoard implements comprising a harpoon and three flat celts. The stone sculptures included a carved railing-pillar of the sixth century from Sultan Ghari, Delhi, and a a Surya image of the Pala period from eastern India. Bronze images of Buddha of the tenth century, of Manjusri from Nepal belonging to the eleventh century and a unique unidentified *devi* of *circa* tenth century from Chamba were the other notable acquisitions during the year.

On the occasion of the Twenth-sixth International Congress of Orientalists an exhibition of paintings and manuscripts was organized.

The laboratory attended to the conservation of varied objects, including metallic ones, stuccos, textiles, manuscripts, arms, paintings, wooden objects and *thankas.* The work of the re-setting of the removed murals from the Rang-Mahal, Chamba, was conti-nued. The laboratory also analysed the plaster and pigments of the murals from Kulu, and worked on Gupta gold coins.

30. PATNA MUSEUM, PATNA.—Re-organization work in the Bronze and Terracotta Galleries continued. A Gupta seal from Chandi-Asthan in District Motihari, pottery from Laghusa, District Saran, and a stone mould from Patna were acquired.

An exhibition of objects from the excavations conducted by the Bihar State Department of Archaeology and the Patna University was organized in connexion with UNESCO's International Campaign for Monuments.

31. ARCHAEOLOGICAL MUSEUM, SANCHI.—Work is in progress for the re-opening of the Museum.

32. GOVERNMENT OF JAMMU AND KASHMIR MUSEUM, Srinagar—The acquisitions in cluded some miniature paintings and two sets of plaster-casts of Mohenjo-daro and Harappan objects from the National Museum, New Delhi. The later Gandhara terra cotta heads, tiles, seals and bronzes from Harwan, Gilgit, etc., were displayed with ap-propriate labels and in proper light.

33. TIPU SULTAN MUSEUM, SERINGAPATAM.—Five hundred copper coins of different denominations belonging to Haidar 'Ali, and Tipu Sultan, three historical pictures of Tipu Sultan and two muskets augmented the collection.

34. ARCHAEOLOGICAL MUSEUM, TRICHUR.—Plaster-models of Indian sculptures through the ages were obtained from the National Museum, New Delhi, and a new gallery was opened in the Museum with a view to helping visitors to study the comparative evolution of Indian and Kerala sculptures. Some of the large-sized models were mounted on oblong teakwood pedestals and smaller ones fixed on wooden pedestals and exhibited in a glass show-case.

35. VICTORIA HALL MUSEUM, UDAIPUR.—Amongst the notable acquisitions made by the Museum were two female statues of the post-Gupta period from Tanesar and a life-size terracotta head of Bodhisattva Maitreya from District Hardoi, which was presented by Shri B.M.S. Parmer. Three headless post-Gupta *matrika* images from Amjhara, District Dungarpur, were also acquired; of them the statue of Varahi is an unusual one.

PRESERVATION OF MONUMENTS

MONUMENTS OF NATIONAL IMPORTANCE

CENTRAL CIRCLE

Madhya Pradesh

1. KOTESVARA-MAHADEVA TEMPLE, KASHITOLA, DISTRICT BALAGHAT.—The area around the temple was cleared of debris and levelled up for the drainage of rain-water.

2. LAT-KI-MASJID, DHAR.—Besides clearance of vegetation from the high walls, the undermined basement at the back of the *masjid* was covered with an earthen ramp.

3. GROUP OF MONUMENTS, MANDU, DISTRICT DHAR.—In addition to the work of making the wall-tops watertight and reconditioning of the approach-roads to the different monuments, the palace-area was paid special attention to by way of removal of debris and consolidation of worn-out surface with *morum* and ballast.

4. BIBI-SAHIB'S MASJID, BURHANPUR, DISTRICT EAST NIMAR.—The work of of grouting in the masonry and loosening of the supports of the *minors* erected during the conservation of its basement, was kept in progress.

5. PALACE AND HAMAMKHANA, BURHANPUR, DISTRICT EAST NIMAR.—The structures inside the palace were repaired and the garden maintained in a proper condi tion.

6. PALACE AND BUILDINGS, MAHAL-GULARA, DISTRICT EAST NIMAR.—The modern whitewash on the Mughal painting was removed.

7. ADAMGARH ROCK-SHELTER, KALAMARI, RASULIA AND KISHANPUR, DIS TRICT HOSHANGABAD.—The pathways leading to the shelters were reconditioned by the filling up of depressions and proper arrangement of the kerbing.

8. CHAUSATH-YOGINI TEMPLE, BHERAGHAT, DISTRICT JABALPUR.—The roof-slabs over the sculptures were rendered watertight.

9. BRAHAMANICAL ROCK-CUT TEMPLES, DHAMNAR, DISTRICT MANDASOR.—Repairs to the passage leading to the temple of Dharmanatha were completed.

10. SIVA TEMPLE, BHOJPUR, DISTRICT RAISEN.—The work of exposing the basement of the sanctum was kept in progress.

11. BUDDHIST MONUMENTS, SANCHI, DISTRICT RAISEN.—Besides routine-work like jungle-clearance, spreading of *morum* over pathways, etc., the tank near Monastery 51 was filled up partially with a layer of black cotton soil to check the leakage of water. The work of fencing the archaeological area at Sanchi was taken up.

12. ANCIENT SITE AND INSCRIBED PILLAR, ERAN, - DISTRICT SAGAR.—Open joints in the slabs of the platform around the pillar were filled in with toned cement-mortar.

13. MONUMENTS, KHIMLASA, DISTRICT SAGAR.—In addition to the removal of debris and vegetation from the fort-walls, extensive work of filling in the open joints of the walls of the Dohla well and Panj-pirs was undertaken.

14. MONUMENTS, GYARASPUR, DISTRICT VIDISHA.—The missing portions of the aprons round the plinths of Ath-khamba and Bajra-math were restored in conformity with the original.

15. TEMPLE OF MAHAKALESVARA AND NILAKANTHESVARA, UN, DISTRICT WEST NIMAR.—The crevices and open joints in the masonry of walls which allowed leakage of water were filled up.

Maharashtra

16. OLD TEMPLES, DHOTRA, DISTRICT BULDANA.—The area was cleared of vegetation and the open joints of the walls of the temples were filled in.

17. OLD TEMPLES, KOTHALI, DISTRICT BULDANA.—The buried plinth of the temple was exposed after the removal of debris and steps were provided for access to it.

Rajasthan

18. OLD TEMPLES, JHALRAPATAN, DISTRICT JHALAWAR.—Ochre-wash and white wash applied to the temples in the past were removed to a large extent to expose the wall-surfaces.

EASTERN CIRCLE

Assam

19. BARADOL, BISHNATHGHAT, DISTRICT DARRANG.—Trees and other vegetal growth on the spire of the temple were uprooted and the damages repaired with brick-work. Replastering of the outer surface of the temple is in progress.

20. GOLAGHAR RUINS, JAYASAGAR, DISTRICT SIBSAGAR.—Trees were uprooted from structure and the damaged portions repaired by the renewal of the brickwork. A layer of fresh concrete was laid on its roof in place of the old one to stop percolation of water.

21. KARENGHAR PALACE, JAYASAGAR, DISTRICT SIBSAGAR.—Vegetation was eradicated from the surface and the top of the structure and its cells and the entire protected area were cleared of jungle growth.

22. SIBDOL, SIBSAGAR.—The damaged main *sikhara* and the four subsidiary ones were repaired and plastered, reproducing simultaneously the ornamental designs as per original. The damaged brickwork of the *mandapa* and the *antarala* was also made good.

23. VISHNUDOL, SIBSAGAR.—The worn-out and spongy plaster of the outer surface of the temple was scraped off and a coat of new plaster applied to reproduce the original ornamental features. The missing portions of brickwork were also rebuilt.

Orissa

24. GROUP OF TEMPLES, BHUBANESWAR, DISTRICT PURL—Leakages in the roofs of the temples of Ananta-Vasudeva, Lingaraja, Muktesvara and Rajarani were repaired by grouting with liquid cement-mortar.

25. SUN-TEMPLE, KONARAK, DISTRICT PURL—The work of injecting liquid cement-mortar mixed with ironite into the foundation-masonry to prevent capillarity of the sub-soil water, which had been in progress from previous years (1963-64, p. 105), was completed.

West Bengal

26. FORT, VISHNUPUR, DISTRICT BANKURA.—The worn-out portions of the roof and platform-terraces were repaired with lime-concrete. Historical notice-boards were fixed.

27. JOR-BANGLA TEMPLE, VISHNUPUR, DISTRICT BANKURA.—Thedamaged floor was relaid with lime-concrete, the decayed and worn-out bricks on the outer face of the walls were replaced; the missing portion of the southern ridge was renewed and toned recess-pointing was done to the open joints in the masonry of basement. Besides, an iron door was provided to the temple, missing wire-fencing restored, the surface of the compound levelled and a historical notice-board fixed.

28. JOR-MANDIR GROUP OF TEMPLES, VISHNUPUR, DISTRICT BANKURA.—The damaged vault over the corridor of the northern temple in the group was rebuilt with stones set in toned mortar and the haunches filled up. The out-of-plumb portion of the temple was re-set in toned mortar. Some portions of the *sikhara* were restored with stones in toned mortar. The roof of the northern temple was re-laid with lime-concrete.

29. LALJI TEMPLE, VISHNUPUR, DISTRICT BANKURA.—The open joints in the masonry of the outer basement of the gateway were pointed with toned cement-mortar.

30. MADAN-GOPAL TEMPLE, VISHNUPUR, DISTRICT BANKURA.—The open joints in the masonry on the outer surface of the basement, were recess-pointed in toned cement-mortar, the damaged floor of the southern corridor was re-laid with lime-concrete and the temple-compound cleared of debris and levelled.

31. NANDALAL TEMPLE, VISHNUPUR, DISTRICT BANKURA.—The damaged vaults were repaired with stones set in toned lime-mortar and the haunches filled up, The roof and floor of the temple were re-laid with lime-concrete. The missing portion of the cornice was rebuilt with suitably dressed laterite stones fixed with copper clamps and mortar, reproducing the original ornamental features. Loose stones of the cornice were re-set with toned mortar. A historical notice-board was put up.

32. RADHA-GOVINDA TEMPLE, VISHNUPUR, DISTRICT BANKURA.—The compound was cleared of debris and the ground levelled up with proper slope for the drainage of rain water. The missing cornice-stones were replaced by new laterite pieces following the original and the open joints recess-pointed. The decayed floor of the outer basement was repaired with lime-concrete and cracks in the roof were repaired.

33. RADHA-SYAM TEMPLE, VISHNUPUR, DISTRICT BANKURA.—The damaged roof of the gateway was re-terraced with lime-concrete. A cultural notice-board was fixed.

34. RADHA-VINOD TEMPLE, VISHNUPUR, DISTRICT BANKURA.—The damaged terraced floor of the outer basement was repaired with lime-concrete. For a proper drainage of rain-water debris was removed and the ground of the compound dressed. A cultural notice-board was also fixed.

35. RASA-MANCHA,VISHNUPUR, DISTRICT BANKURA.—The ground of the compound was levelled up with a proper slope for the drainage of rain-water. Missing ornamental pillars, arches, vaults and the stepped-roof were rebuilt with specially-manufactured bricks. A fresh layer of lime-concrete was laid on each of the vaulted roofs and the damaged floor of the outer basement and the stepped-roof was plastered with *lime-surkhi* mortar.

36. RADHA-DAMODARA TEMPLE, SURI, DISTRICT BANKURA.—The damaged floor of the basement was re-laid with lime-concrete. A historical notice-board was fixed up.

37. CHIKA MOSQUE, GAUR, DISTRICT MALDA.—The decayed and salt-affected bricks were replaced by new ones and a layer of fresh lime-concrete was laid on the roof.

38. DAKHIL-DARWAZA, GAUR, DISTRICT MALDA.—The work of repairing the damaged brickwork of the arched facade which had been taken up last year was completed and a layer of fresh lime-concrete laid on the roof.

39. KOTWALI GATE, GAUR, DISTRICT MALDA.—The accumulated debris was re moved from the basement of the western bastion. The gate-wall on the western side was rebuilt with Gaur bricks, the new work being recess-pointed and the top made water tight.

40. LOTAN MOSQUE, GAUR, DISTRICT MALDA.—The decayed and salt-affected bricks of the walls were replaced and broad ornamental features reproduced. The wall-tops were made watertight.

41. CHAR-BANGLA TEMPLE, BARANAGAR, DISTRICT MURSHIDABAD.—Trees were removed from the structure and the damages in the brickwork made good. The floor was repaired by a layer of fresh lime-concrete.

42. TOMB AND MOSQUE OF MURSHID QULI KHAN, KATRA, DISTRICT MURSHIDABAD.— In continuation of last year's work (1963-64, p. 106) the damaged brickwork of the mosque was renewed with specially-manufactured bricks. Fresh lime-concrete was laid on the terraced floor of the small chambers of the mosque-enclosure and the pillars rebuilt in brickwork.

43. TOMB AND MOSQUE OF ALIVARDI KHAN AND SIRAJU'D-DAULA, KHOSHBAGH, DISTRICT MURSHIDABAD.—The damaged brickwork of the plinth of the first enclosure was repaired and a layer of fresh lime-concrete laid on the floor. The floor of the mosque was also re-laid with fresh lime-concrete. Plastering of the outer surface of the mosque-wall was taken up and is in progress.

MID-EASTERN CIRCLE

Bihar

44. BARABAR AND NAGARJUNI CAVES BARABAR, DISTRICT GAYA.—In order to stop the leakage in the roof the accumulated silt on the top of the caves was removed cracks traced out and grouted with liquid cement-mortar. Water-marks on the inner rock-surface of the caves were removed.

45. RAJA-VISAL-KA-GARH, VAISALI DISTRICT MUZAFFARPUR.—For the proper protection of the mound the area was fenced off with barbed wire fixed on angle-iron posts.

46. EXCAVATED REMAINS, KUMRAHAR, DISTRICT PATNA—Rain-water accumulating on the floor of the pillared hall area during rainy season was pumped out and the whole site kept free from vegetation. Lime-concrete was provided on the approach-road over an extensive area in the front.

47. EXCAVATED REMAINS, NALANDA, DISTRICT PATNA.—The work of laving lime-concrete on the approach-road on the east of Monestery 11, which had been in progress (1963-64, p. 106) was completed. The damaged floor of the verandah of Monastery 10 on the east and south was re-paved with lime-concrete. Vegetation was uprooted from the walls and compouds of the monasteries and temples.

48. ANCIENT SITES, RAJGIR, DISTRICT PATNA.—Extensive jungle-clearance was done in addition to levelling and crossing of the approach-roads. The ugly and unnecessary rubble-stone pillar erected earlier on the floor of Son-Bhandar cave to support the roof was removed.

49. FORT AND GATEWAY, ROHTAS, DISTRICT SHAHABAD.—The compound-walls of Habsh Khan mosque and Shish-Mahal were underpinned with rubble-stone and the exposed tops of the compound-wall of the former were made watertight. Open joints of the steps of the Harishchandra temple and the platform in front of it were filled up with toned lime-mortar.

50. GROUP OF MONUMENTS, SASARAM, DISTRICT SHAHABAD.—The decayed and damaged floor of the Hasan Shah Suri's tomb was repaved with fresh lime-concrete mixed with cement. *Morum* was spread over the approach road and consolidated.

The leakage in the dome of the tomb of Sher Shah was stopped by grouting with liquid cement-mortar. The damaged floor was made good by plastering with *time-surkh* mortar mixed with cement and toned properly. Iron grills, fencing-posts, etc., were painted with light-grey paint.

Uttar Pradesh

51. NIRVANA STUPA, KUSINAGAR, DISTRICT DEORIA.—In order to render the inner *stupa,* built with brick in mud-mortar, damp-proof brickwork all round the *stupa* was taken out to a depth of over 7 m. and re-built in cement mortar mixed with a water-proofing compound. Nearly three-fourth of the work was completed.

52. OLD FORT, JAUNPUR, DISTRICT JAUNPUR.—A layer of beaten lime-concrete was laid over the roof of eastern gate. Approach-roads damaged during the last rainy season were repaired.

53. INSCRIPTION ON BHANDARI-DEVI HILLS, AHRAURA, DISTRICT MIRZAPUR.—In order to save the Asokan inscription from the onsalught of weather and vandalism, the construction of a suitable shed of rubble masonry was taken in hand.

54. EXCAVATED REMAINS, RAJGHAT, DISTRICT VARANASI.—The important excavated trenches within the protected area were temporarily roofed. Extensive earthwork was carried out on the upper terrace of the site including filling up deep trenches, ditches, etc. A suitable slope between the upper and lower terraces was maintained in the earthwork.

55. EXCAVATED REMAINS, SARNATH, DISTRICT VARANASI.—Extensive works to make the excavated structural remains watertight were carried out. The marginal drain on the north was cleared of silt and the accumulated debris in Monastery III and in the Kumaradevi monastery was removed. A high scaffolding for carrying out repairs to the Dhamekh Stupa was erected.

56. DHARARA MOSQUE, VARANASI.—The accumulated debris and stones m the com pound of the mosque obtained by dismantling the leaning *minar* were removed. The useful and carved stones were taken to Rajghat and stacked properly.

NORTHERN CIRCLE

Madhya Pradesh

57. GROUP OF TEMPLES, KHAJURAHO, DISTRICT CHHATARPUR.—The plinth of the corner-shrine of the Lakshmana temple, which had gone out of plumb, was repaired by

removing the loose stones and re-setting them in proper position. Besides, the open joints of the stones were pointed where necessary. The area in front of the Jaina temples was levelled and dressed. The loose stones in the floor of the Adinatha temple were reset and its facade made watertight by pointing the open joints.

58. PATALESAVARA TEMPLE, AMARKANTAK, DISTRICT SHAHDOL.—The plinth of the temple was exposed, open joints pointed and a modern platform at its side removed.

59. VIRAT TEMPLE, SOHAGPUR, DISTRICT SHAHDOL.—Cracks and cavities in the surface of the *sikhara* of the temple were filled with cement-mortar, the top of its *antarala* rendered watertight and the dead concrete of the platform around the temple replaced.

60. TEMPLE AND MONASTERIES, CHANDREHE, DISTRICT SIDHI.—Wide-open joints and cracks in the roof of the monasteries were filled in and the parapets of the temple-platform were rendered watertight, in addition to the eradication of vegetation from the surface of the monuments.

Rajasthan

61. PALACES, DIG, DISTRICT BHARATPUR.—The open joints between the stone slabs of the roof of the Gopal-Bhawan were pointed with cement-mortar and its lower rooms in the northern and southern flanks whitewashed.

Uttar Pradesh

62. CHAUBURJI, AGRA.—The pillars and niches of the central room and side-rooms were underpinned.

63. CHINI-KA-RAUZA, AGRA.—The open joints in the brickwork in the south-eastern corner-room were recess-pointed. The ceilings of the underground rooms were similarly treated.

64. FORT, AGRA.—The walls of the northern apartment of the Jahangiri-Mahal and the Machchhi-Bhawan, from which the old *kankar-lime* plaster had fallen off exposing the underlying brick-surface, were recess-pointed and the edges of the plaster secured. Overhanging portions of brickwork were underpinned The decayed *dasa*-stones were replaced at some places. In the Moti-Masjid a loose *gardona-stone* was removed from one of its northern bays and re-set. Missing portions of the plastered surface along the stairs were renewed with matching material. The eastern *dalans* flanking the inner Amar Singh gate were underpinned, pointed and plastered, as necessary.

65. I'TIMADU'D-DAULA'S TOMB, AGRA.-The open joints of the marble terrace of the roof were pointed with special lime-mortar after the removal of the decayed material which had been transmitting dampness to the ceiling below. The open joints in the wall on the river-side were recess-pointed to make the wall watertight

66. RAM-BAGH, AGRA.-The modern railing along the pathways was dismantled.

67. TAJ-MAHAL, AGRA,—The sunk portion of the terrace between the main tomb and the Mihman-Khana were raised by the replacement of decayed stones with new ones where necessary and by the re-setting of the good pieces in a proper slope. The corner-*burjis* of the compound-wall were provided with doors. A part of the causeway on the east of the central channel was repaired by the re-setting of stones that had been dislodged and had gone out of plumb. The loose pieces of the inlay-panels in the Mihman-Khana were secured. Portions of the exposed wall-surface of the courtyard.

outside the main gate were replastered. The concrete of the roof of the main gate was renewed with fresh material.

68. GROUP OF MONUMENTS, FATEHPUR-SIKRI, DISTRICT AGRA.—Fresh lime-concrete was laid over the south-western platform outside Jodh Bai's palace and on the floor of the gallery and rooms of Shah Quli's *baoli.*

69. AKBAR'S TOMB, SIKANDARA, DISTRICT AGRA.—Fresh lime-concrete was laid on the floor of the central room of the western flank of the main entrance-gate. Some of these rooms were also provided with wooden doors of Mughal pattern. The damaged *jalis* of the Naqqar-Khana were changed. The decayed and broken stones of the apron on the second and third floors of the tomb were changed and the sunk portions of the apron raised. A large patch in the compound-wall to the east of the main entrance, which had fallen during the rains, was reconstructed in rubble matching with the original construction.

70. MARIYAM'S TOMB, SIKANDARA, DISTRICT AGRA.—The decayed plaster of the eastern *dalans* was removed and the surface re-plastered in *kankar-lime.*

71. GROUP OF TEMPLES, BAUNATH, DISTRICT ALMORA.—As the unprecedented floods in the river Gomati had endangered the sculpture-shed, temporary fender-walls were raised from the bank to prevent erosion.

72. EXCAVATED REMAINS, AHICHCHHATRA, DISTRICT BAREILLY.—The exposed structures of sites AC-I and AC-II were cleared of vegetation and some of the brick walls topped with earth.

73. RANI LAKSHMIBAI'S PALACE, JHANSI.—Modern accretions were removed, damaged ornamental pilasters rebuilt, fallen plaster restored, and the openings provided with doors. In the corner-room on the south-east, the fallen ceiling was renewed after replacing the wooden beams and laying concrete over the teakwood planks.

74. IMAMBARA OF 'ASAFU'D-DAULA, LUCKNOW.—The decayed concrete on the roof over the eastern *dalans* of the outer courtyard was renewed with fresh lime-concrete.

75. NADAN-MAHAL, LUCKNOW.—The open joints in the *chhajja* were filled, the edges of the broken plaster secured and the walls underpinned where necessary.

76. GOVINDADEVAJI'S TEMPLE, VRINDAVAN, DISTRICT MATHURA.—On the rear of the temple the brickwork was recess-pointed in *kankar-lime.* The damaged wire-netting of the central chamber of the temple was renewed.

NORTH-WESTERN CIRCLE

Delhi

77. 'ADILABAD, DELHI.—Debris accumulated in the south-eastern gate of Adilabad fort was removed and the gateway-complex with guard-rooms exposed to view. Extensive clearance was also undertaken of the southern and western corridors and of the top of the western *burji.*

78. BIRAN-KA-GUMBAD, DELHI—The open joints in the masonry of the outer and inner walls were grouted and pointed. The decayed plaster was removed from the flooring of the monument and the exposed surface re-laid with fresh lime-cement mortar.

79. JAMI'-MASJID, DELHI,—In continuation of the last year's work—(1963-64, p. 109) new ornamental red sandstone slabs were fixed in the squinches of the main prayer-chamber. The work of replacing the worn-out sandstone pieces by new ones at the top of the *minar* is in progress.

M1DGA/67—7

80. KASHMIRI GATE, DELHI.—The dilapidated city-wall of Shahjahanabad and cells to the right of the gate were attended to by way of pointing and plastering of the rubble-stones. Fallen patches of stone and brick masonry were also repaired at places where there was likelihood of further damage.

81. QUTB ARCHAEOLOGICAL AREA, DELHI.—In continuation of the last year's work (1963-64, p. 109), the remains of the northern gate of the Quwwatu'l-Islam mosque extended by 'Alau'd-Din Khalji, which had been exposed to view after the removal of debris, were stabilized and partially restored in accordance with the original indications by pointing, plastering and rebuilding of the masonry.

82. QUTB-MINAR, DELHI.—The Minar was receiving the attention of the Survey for some time past and the cracks found all over the body were kept under observation. As it was thought expedient to have the structure examined thoroughly by experts, a committee was set up to recommend measures for the structural stability of the monument. The committee carried out a detailed examination of the foundation, pattern I of cracks both on the interior and exterior surfaces, mortars, stonework, etc., and studied the various aspects concerning the structural stability of the monument. Fractured masonry patches were also opened out at different heights for the examination of the hearting-masonry. The Survey of India carried out verticality tests, which revealed that the Minar was off the vertical by about 635 mm. in the south-west direction, the inclination seeming to be of old origin. The Committee finally opined that although the Minar was structurally sound, to improve upon the present conditions and for better preservation, the following measures, among others, should be taken: (/) strengthening of the foundations by injecting liquid cement into the loose rubble-masonry surrounding and below the platform of the ashlar-masonry; *(if)* pointing of all joints with a mixture of reactive *surkhi* and cement; *(Hi)* replacement of all crushed and badly-cracked stones and *(iv)* removal of all corroded dowels and use of gun-metal dowels instead. Arrange-ments are being made to initiate the repairs. .
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83. RED FORT, DELHI.—In continuation of the last year's work (1963-64, p. 109) worn-out red sandstone slabs of the Diwan-i'Am were replaced. Extensive repairs by way of giving a face-lift to the monument were also undertaken in connexion with *Son et Lumiere* spectacle. This included re-alignment of the approach-roads, repairs to the pathways, floors and application of coats of wash to the exterior surface of the Hammam, Diwan-i-Khas, Rang-Mahal, Moti-Masjid and other monuments.

84. SUNEHRI-MASJID, DELHI.—Besides structural repairs to the monument proper by way of grouting the cracks and filleting the broken edges of plaster, the open area of the monument was also enclosed within a barbed-wire fencing and its precincts tidied up by levelling and dressing the ground, spreading *morum,* etc.

1 *Himaehal Pradesh*

85. LAKSHMI-NARAYANA TEMPLE, CHAMBA.—The bulged portions of the ashlar-masonry wall of the *sabha-mandapa* were taken down and rebuilt course by course.

Punjab

86. BAIJNATH TEMPLE, BAIJNATH, DISTRICT KANGRA.—The damaged portions of the boundary-wall of the temple were repaired. Other repairs to the main structure including the *sikhara* of the temple are in progress.

87. FORT, KANGRA.—A parapet-wall was constructed on the lower terrace facing the riverside. The damaged flooring was concreted and a parapet was provided to the massive bastion in the Shish-Mahal area of the fort.

88. KATOCH PALACE, TIRA-SUJANPUR, DISTRICT KANGRA.—The wall to the south of the *baradari,* which had bulged and endangered its structural stability, was dismantled and rebuilt.

89. PATHAR-MASJID, THANESWAR, DISTRICT KARNAL.—The fallen portions of the plinth of the courtyard and parapet wall of the northern, southern and western sides were rebuilt in country-brick. Other items such as pointing, plastering and sealing of holes and hollows and open joints were also attended to.

90. SHAIKH CHILLI'S TOMB, THANESWAR, DISTRICT KARNAL.—The parapet-wall of the high platform was repaired by way of pointing and plastering and proper drainage of water from the platform was ensured.

Rajasthan

91. AKBAR'S MOSQUE, AMBER, DISTRICT JAIPUR.—In continuation of the last year's work (1963-64, p. 110) replacement of *chhajja-s\abs* over the top balcony of the *minar* was carried to a completion.

92. JAGAT-SIROMANI TEMPLE, AMBER, DISTRICT JAIPUR.—The demolition of modern structures immediately abutting the plinth of the temple brought to view, for the first time, the beautifully-carved plinth of the porch. For the proper preservation of the paintings on the ceiling of the *sabha-mandapa,* a wooden frame fitted with wire-mesh was fixed above the pillars. This helped to keep the paintings safe from the bats and pigeons. The roof was also made watertight by pointing the open joints in the stones.

Uttar Pradesh

93. SHAH PIR'S TOMB, MEERUT.—Replacement of the decayed roof and repairs to the brickwork of the plinth were carried out. Heavy architectural pieces of the red sandstone lying in the precincts were collected and stacked properly. Beehives were removed from the high walls of the monument.

SOUTH-EASTERN CIRCLE

Madhya Pradesh

94. PATALESVARA TEMPLE, MALHAR, DISTRICT BILASPUR.—The sanctum was provided with a reinforced cement-concrete roof after the raising of the masonry-walls to protect the sculptures inside from the actions of weather. The surrounding area was properly levelled and gravel spread over the surface.

95. OLD TEMPLE, GANDAI, DISTRICT DRUG.—The area around the temple was cleared neatly and the dilapidated barbed-wire fencing repaired.

Maharashtra

96. RANI-MAHAL, BALLARPUR, DISTRICT CHANDA.— After clearance of debris the terrace towards north-east corner, opposite the Rani-Mahal, was exposed. Further work is in progress.

Andhra Pradesh

97. RUINED PALACE, FORT, GOOTY, DISTRICT ANANTAPUR.—A turnstile gate was fixed to the entrance to the fort to regulate entry. General maintenance by way of removal of vegetation and clearance of debris was also carried out.

98. FORT, GURRAMKONDA, DISTRICT CHITTOOR.—The roof over the inscription slab in the *mahal* was made watertight.- The woodwork on the second floor of the palace was treated with wood-preservative.

The old worn-out door of the Narasimhasvami temple was replaced by an ancient type of ornamental door with brass knobs.

99. AGASTYESVARA TEMPLE, CHILMAKURRU, DISTRICT CUDDAPAH.—The terrace of the *entrancQ-mandapa* was made watertight by a layer of brick-jelly concrete with a proper slope for drainage. The ground-level inside the courtyard of the temple was raised by filling with gravel to cover the exposed surface of the foundation. The missing coping of *napa* stone slabs was restored by providing a new one in conformity with the existing ones. The Bhairava temple inside the compound was also attended to by the re-setting of the dislocated roof-slabs and rendering the roof watertight. The portion of a fallen rubble-wall of the temple was also restored.

100. FORT, GOLCONDA, DISTRICT HYDERABAD.—The damaged ornamental parapets over the walls on the north of Fath-Darwaja were repaired. The open joints in the for ification-walls were recess-pointed with combination-mortar and the disturbed and loose stones were re-set.

101. CHAR-MINAR, HYDERABAD.—Open joints in the masonry of the platform were pointed, the broken Shahabad stones in the flooring inside the four *minars* on the ground-floor level removed and replaced by new ones in conformity with the original scheme and those of the landing galleries in the *minar* were renewed with fresh cement-concrete. The decayed plaster from the intrados of the main dome was replaced with fresh lime-cement plaster to match with the existing surface in addition to extensive patch-plastering to the different parts of the monument.

102. ROCK-CUT CAVES, MOGALRAJAPURAM, VDAYAWADA, DISTRICT KRISHNA.-Shutters on angle-iron frames with welded mesh were provided in Cave 1 to prevent vandalism and entry of bats. Cracks appearing on the top of Caves 1 and 2 were filled up with combination-mortar and the roof rendered watertight. Besides eradication of vegetation from the rock-facade, the area round the caves was cleaned.

103. 'ABDUL WAHAB KHAN'S TOMB, KURNOOL.—The cracks on the terraced roof of the tomb were opened up and sealed with combination-concrete to match the adjoining area after thorough grouting. The adjoining area inside the tomb was tidied up.

104. KONDAREDDY BURJ, KURNOOL.—The disturbed stone slabs of the flooring in the battlement-area were re-set by providing new ones. The roof of the cells was made watertight with a course of flat tiles in combination-mortar. The worn-out plaster on the ceilings of cells and on the walls of the battlement was renewed with lime-plaster.

105. PAPANASI GROUP OF TEMPLES, ALAMPUR, DISTRICT MAHBUBNAGAR.—In continual tion of last year's work (1963-64, p. Ill), the roof of a temple was made watertight *hy* laying a course of fresh brick-jelly concrete. Levelling the surrounding areas of the temple for providing stone flooring is in progress. Further earthwork for the construction of aretaining-wall to stop entry of flood-waters is being continued.

106. FORT, WARANGAL.—Excavation for the clearance of debris was carefully carried out inside the area of the four *toranas* with a view to salvaging architectural pieces of the partly-exposed ruins of Svayambhuva temple-complex belonging to the Kakatiya period. Although a major portion of the ruins of the temple is still to be exposed, the clearance of d6bns carried out so far revealed near the *torana,* basements of a temple and its *mandapa* and of another structure. Remains of the old compound-wall could also be traced.

SOUTHERN CIRCLE

Madras

107. SHORE TEMPLE, MAHABALIPURAM, DISTRICT CHINGLEPUT.—The sand-filling accreted around the temple was excavated to expose the original plinth. Loose patches of the original plinth were strengthened with combination-mortar.

108. VAIKUNTHA-PERUMAL TEMPLE, UTTIRAMERUR, DISTRICT CHINGLEPUT.—The courtyard was cleared of debris and the stone flooring was re-laid with proper slope to drain off rain-water.

109. JALAKANTESVARA TEMPLE, VELLORE, DISTRICT NORTH ARCOT.—The terrace was opened and the thickness of the heavy roof-slabs was chipped off to reduce the weight on the sagging beams and broken pillars. The work is being continued.

Mysore

110. TIPU SULTAN'S PALACE, BANGALORE.—The damaged wooden joints with leaky terrace were replaced with new material following old clues in the front portion of the western wing.

111. PATTABHIRAMA TEMPLE, HAMPI, DISTRICT BELLARY.—The massive broken beams of the *maha-mandapa* together with the modern supporting-pillars were removed. The work of replacing the broken beams and laying fresh concrete on the roof is in progress.

112. DARYA-DAULAT-BAGH, SERINGAPATAM, DISTRICT MANDYA.—The leaky terrace was rendered watertight.

113. MALLIKARJUNA TEMPLE, NADKAISI, DISTRICT SHIMOGA.—The terrace was made watertight by the resetting of the hood-stones and channels-stones and pointing of the open joints neatly in combination-mortar. The surface was re-laid with flat tiles laid over brick-jelly concrete and finished with plaster to match with the old surface.

Pondicherry

114. MULANADAR TEMPLE, BAHUR.—The modern partition-walls in front of the sanctum were removed. The original features of the temple were thus brought to light.

SOUTH-WESTERN CIRCLE

Goa

115. GROUP OF MONUMENTS, GOA VELHA.—In continuation of the last year's work (1963-64, p. 115) at Se Cathedrel (pl. LVIII) the entire roof with its wooden members was removed from a height of 30 m. above the ground-level and was provided with a new roof of Mangalore tiles over new wooden members similar in design to the original

after strengthening ths loose masonry of the haunch of the vaults (pi. L1X). The vaulted roof was also made watertight by grouting of cracks and plastering of the surface in conformity with the original. Nearly fourteen hundred cement bags were used for the repairs of this roof alone. The accretions on the first floor of the side altars were

removed and the decayed floor was provided with a layer of 8-cm. thick cement-concrete with the top plastered with cement-mortar. Modern constructions over the flanking structures were removed, and each of them was provided with a reinforced cement-concrete roof with wooden ceiling according to original clues. Similarly, a roof was provided on the extant portion of the broken tower, leaving an opening for the spiral staircase, and the broken tops of side-walls were consolidated. The decayed flooring of the balcony on the east of the first floor over earth-filling was provided with a stone flooring on a hard bed. Besides, the missing or damaged doors and windows were restored, exposed surfaces of walls were plastered and their inner face was whitewashed and the outer face treated with snowcem. The laterite pavement in front was repaired.

The convent attached to Se Cathedral was repaired by way of changing the worn-out wooden members of the roof, renewing the old plaster, underpinning the unsupported portions of masonry in walls, replacing the old doors and windows with new ones and repairing the damaged floors.

The interior walls of the Basilica of Bom Jesus were plastered at places and distempered and the woodwork was repainted. The broken marble stones of the main altar and the platform in front were replaced by new ones and collapsible gates fixed to it both for protection and better lighting. The walls of the hall and the room in the first floor connecting the bell-tower were plastered and the surface finished smooth; the openings in the exterior walls were provided with new windows with glazed shutters; the interior surface was whitewashed and the exterior surface cleaned of moss and lichen. Repairs to the broken and missing portions of pillars, pilasters, mouldings and cornices, etc., were also attended to with cement-concrete duly reinforced, wherever necessary, and finished to match with the adjacent stone surface. The open joints in the laterite stone platform in front were pointed after raking out the joints to match old work and to make the surface watertight.

The exposed surfaces of the walls of the Convent attached to the Basilica were plastered, stains from the surfaces removed, the walls whitewashed and the woodwork painted.

The leaky Mangalore tiled roof of the Church of St. Francis of Assisi (pis. LX and LXI) was repaired by replacing the broken and missing tiles. The loose patches of plaster on the walls were renewed with new mortar and the interior walls given two coats of lime-wash. The window-frames and shutters on the side-walls together with the missing wooden members of the flooring of the balcony in the first floor were renewed and the disturbed ones were refixed. The stone pavement in the front, which had been very much disturbed, was repaired with old and new stones.

In addition to attending to the similar type of repairs to the Convent attached to the Church of St. Francis of Assissi, a staircase leading from the ground floor to the first floor was reconstructed with stones available at the site, the damaged floor of the verandah was concreted, the walls were whitewashed in the interior and the woodwork painted. A new wooden roof was provided to the pillared hall with the necessary new members simulating the old. The floor of this hall was provided with Shahabad paving over sand-filling. For the main entrance a new door of the old pattern and design was fixed.

Fallen debris and vegetation-growth were cleared from the area of the Church of St. Augustin, exposing the original floor-level, and a few side walls of the altars, nave and cells were partly exposed.

The growth of rank vegetation over and around the Church of St. Caitano was cleared and huge quantities of accumulated debris lying on the top of the vaulted roof along with all loose stones and rotten scantlings strewn all over the area were removed. Clearance also exposed two parallel laterite walls in the vicinity of the Church.

Maharashtra

116. ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.—In conformity with the policy followed in the preservation of rock-cut monuments and according to a laid-down programme, the front-pillars in ashlar-masonry on the first floor of Cave 15 were replaced with those of cement-concrete and finished to match the adjacent rock. The missing beam above them was also restored. The conspicuous masonry-pillars erected to support the cracked roof over the image of Gaja-Lakshmi in Cave 16 were dismantled and instead two iron girders were inserted into the rock. The cracked roof was also repaired with rein forced cement-concrete work.

117. ELEPHANTA CAVES, GHARAPURI, DISTRICT KOLABA.—The work of restoration of the pillars in reinforced cement-concrete which had been started earlier (1963-64, p. 155) was kept in progress.

118. SINDHUDURGA FORT, MALWAN, DISTRICT RATNAGIRI.—All the jungle-growth on the fortification-wall was removed. The breaches in the wall were closed by the renewal of the masonry with old stones placed on the rock-bed. The work was completed with considerable patience and skill as the time available between the tides was short and heavy large-sized stones had to be handled.

Mysore

119. GROUP OF MONUMENTS, BIDAR.—Besides large-scale clearance of jungle and debris from the fort-area, the approach-roads damaged during the rains were recondi tioned.

WESTERN CIRCLE

Gujarat

120. 'AZAM MUAZZAM RAUZA, AHMADABAD.—The decayed and worn-out flooring of the first floor and steps leading to the *Rauza* were repaired.

121. EXCAVATED REMAINS, LOTHAL, DISTRICT AHMADABAD.—Portions of the mud-brick structures in Streets 4 and 5 were repaired with specially-manufactured bricks.

122. RAUZA OF BABA GANJ BAKSH, SARKHEJ, DISTRICT AHMADABAD.—The cracks in the terraced roof were grouted and sealed with toned concrete to match the adjoining area. The main dome of the tomb was also similarly treated and a portion of the spongy plaster was redone.

123. TOMB OF MUHAMMAD BEGHRA, SARKHEJ, DISTRICT AHMADABAD.—A part of the uneven floor of the tomb was dismantled and redone on a cement-concrete bed and a few decayed stones were replaced in the process.

124. HIRA GATE, DABHOI, DISTRICT BARODA.—The tilted and disturbed ashlar-masonry of the outer face of the eastern side was taken down carefully and restored in lime-cement-mortar.

125. DURVASA RISHI'S ASRAM, PINDARA, DISTRICT JAMNAGAR.—Temple 4, with a frieze of sculptured entablature, was fully dismantled and re-set. While excavating into the foundations of the *garbhagriha* of this temple more than two phases of earlier structural activities were noticed.

126. KHAPRA-KODIA CAVES, JUNAGADH, DISTRICT JUNAGADH.—Three masonry-pillars erected in the past were replaced with those of reinforced cement-concrete. The surfaces of the pillars were finished to match the adjoining rock-surface. Fourteen other masonry pillars in Caves 1, 6, 8 and 10 were also suitably plastered.

127. SUN-TEMPLE, MODHERA, DISTRICT MEHSANA.—The loose stone slabs lying over the brick platform around the temple were salvaged and re-set in lime-cement-mortar over a lime-concrete cushion in the south-east corner of the *nritya-mandapa.*

128. SHRINES, SANDER, DISTRICT MEHSANA.—Accumulated debris was removed from around the two shrines and the concealed portion of the temples exposed. The old flush-pointing was raked out from the masonry and the joints in them were suitably filled in with toned cement-mortar. A modern pedestal in the *garbhagriha* along with the cement-concrete floor was removed and restored. A flight of steps was provided near the entrance.

129. KHAN-SAROVAR TANK, PATAN, DISTRICT MEHSANA.—The open joints of the brickwork of walls of the inlet sluice-channel were suitably filled in with toned mortar.

130. SAHASRALINGA TANK, PATAN, DISTRICT MEHSANA.—A portion of the side-walls of the waste-weir of the tank was traced and raised to show the function of the waste-weir attached to the tank.

131. SHAIKH FARID'S TOMB, PATAN, DISTRICT MEHSANA.—The sunken floor of the main tomb with its porch was taken out and re-set on a concrete cushion. A temporary bund was erected near the fallen retaining-wall for the protection of the tomb

132. CITADEL-WALLS, PAVAGARH, DISTRICT PANCH-MAHALS.—A part of the bulged wall near the Halol gate and Shahar-ki-Masjid were carefully taken down and suitably restored.

133 JAMI'-MASJID, PAVAGARH, DISTRICT PANCH-MAHALS.—A part of the bulged compound-wall on the southern side of the enclosure were taken down carefully and restored to the original height. The architectural stones which had been missing were traced m the neighbouring debris and re-set.

134. PANCH-MAHUDA MOSQUE, PAVAGARH, DISTRICT PANCH-MAHALS.- The plinth wall on the back side which had completely fallen down on the western side, was traced out and re-set, and those on the other sides were exosed.

Rajasthan

. 135. MAHAKALA TEMPLE, BIJOLIA, DISTRICT BHILWARA.—A portion of the sunken stone flooring from the courtyard of the said temple was taken out and re-done after providing a lime-concrete bed.

136. GROUP OF MONUMENTS, FORT, CHITORGARH.—The Southern portion compound-wall of Rana Kumbha's palace from the corner of the Tel tank to the Ganesa temple was traced out and reconstructed in dry rubble-masonry.

137. DECORATED WELL, MENAL, DISTRICT CHITORGARH —The which had fallen inside the well were taken out and suitably fixed at their proper places.

138. SAS-BAHU TEMPLE, NAGDA, DISTRICT UDAIPUR — The work watertightening of a portion of the *sikhara* of Bahu temple after clearance of debris was completed.

MONUMENTS MAINTAINED BY STATES

ANDHRA PRADESH

The following monuments were attended to :

1. NAWAB'S TOWER, CUDDAPAH.
2. SYED AHMAD'S TOMB, CUDDAPAH.
3. MUSHIRABAD MOSQUE, HYDERABAD.
4. OLD TEMPLE, GOLLATHAGADI, DISTRICT MAHBUBNAGAR.
5. DICHAPALLI TEMPLE, DISTRICT NLZAMABAD.

GUJARAT

6. MONUMENTS, JUNAGADH.—The group of monuments in and around Junagadh, comprising Jami'-Masjid, Adi-chadi-Vav, Navghana-Kuva, fort-wall and Dhaka-ban in Uparkot were repaired.

7. MONUMENTS, PRABHAS-PATAN, DISTRICT JUNAGADH.—The old Jaina temple and Caves 1, 2 and 3 received attention.

8. GROUP OF TEMPLES, HARA VALLEY, DISTRICT SABAR-KANTHA.—The group of four temples of Siva were cleared of vegetation and debris.

9. TEMPLE, POLO JUNGLE, DISTRICT SABAR-KANTHA.—The large Jaina temple was repaired by way of refixing the loose stones after dressing. The loose sculptures scattered around the temple were also collected and restored to their proper places.

KERALA

10. KRISHNAPURAM PALACE, KAYAMKULAM, DISTRICT ALLEPPEY.-The repairs undertaken last year like renewing the decayed plaster and repairing the roof were completed. Further works of providing a boundary-wall and an ornamental fencing around the garden were taken up.

MADRAS

11. PADMANABHAPURAM PALACE, THUKALAY, DISTRICT KANNIYAKUMARI.-The repairs to the palace, noted for the beautiful mural paintings were continued For the safety of the paintings the leaky roof was covered with a copper sheet The ill-lighted rooms having paintings were fitted with electric lights The damaged flooring of the rooms in the different floors was repaired and renewed wherever necessary. Besides, the tanks and wells in the premises were cleaned by pumping out the water in them and the growth of jungle from the compound was removed.

MAHARASHTRA

12. ROSHAN-DARWAZA, KARADPURA, AURANGABAD.-The gate was repaired. The work included the fixing of the key-stone in the main arch.

MADHYA PRADESH

The following monuments were repaired :

13. CHAMAR-MAHAL PALACE, ISLAMNAGAR, DISTRICT SEHORE.
14. CHOUBIS-KHAMBA, UJJAIN.

M1DGA/67-7A

ORISSA

15. BHARATESVARA TEMPLE, BHUBANESWAR, DISTRICT PURI.- The lower portions of the outer wall of the temple were restored up to a height of about 1.82 m. and its core above this height was strengthened by cement-pointing of the open joints, filling up of the cracks and re-setting of the detached stones in their proper places.

RAJASTHAN

The following monuments received attention :

16. AKBAR'S FORT, AJMER.
17. AMBER PALACES AND OBSERVATORY, JAIPUR.
18. JASWANT CENOTAPH, JODHPUR.
19. DEVALS AT MANDORE, JODHPUR.
20. AMBIKA TEMPLE, JAGAT, DISTRICT UDAIPUR.

UTTAR PRADESH

21. SUR-KUTI, RUNAKTA, DISTRICT AGRA.-Minor repairs to this monument were carried out.

22. TEMPLE OF SRINGI-RISHI AND SANTA-DEVI, SRINGVERPUR, DISTRICT ALLAHABAD.- The damaged floor and steps of the temple were repaired.

23. GROUP OF TEMPLES, BAGESWAR, DISTRICT ALMORA.- The worn-out wooden canopy over the temple of Baghnath was replaced by a new one and the floor of the cella repaired. A shutter was fitted to the wooden door of the Vanesvara temple.

24. SIVA TEMPLE, MUNDESWAR, DISTRICT ALMORA.- Three subsidiary temples in the premises were repaired to check further deterioration. The courtyard was cleaned and vegetations on the temples removed. The old dharmasala was thoroughly repaired.

25. MAZAR OF SANT KABIR DAS, MAGHAR, DISTRICT BASTI.- The decayed floor, side-walls and the platform of the Mazar were repaired and the shrubs and accumulated rubbish removed from the compound to render the monument neat and tidy.

26. UNDERGROUND TEMPLE, PAHARI-BHITARI, DISTRICT HAMIRPUR.- The roof, floor and side walls were repaired and the entrance-gate provided.

27. TEMPLE OF YOGAMAYA, MAHABAN, DISTRICT MATHURA.- The damaged walls of the two side-rooms of this temple and the plinth were repaired.

VII. ARCHAEOLOGICAL CHEMISTRY[1]

TREATMENT OF MONUMENTS AND PAINTINGS

ANDHRA PRADESH

1. THOUSAND-PILLARED TEMPLE, HANAMKONDA, DISTRICT WARANGAL.—The finely-carved ceiling and the four pillars of the central hall were treated for the removal of soot, oil, etc.

ASSAM

2. VISHNUDOL, JAYSAGAR, DISTRICT SIBSAGAR.—The delicate terracottas and decorations in mortar on this ancient temple, which had been encrusted with a compact growth of moss and lichen, were subjected to elaborate chemical treatment. The removal of the vegetation-growth was followed by fungicidal treatment and application of a resinous preservative layer in organic solvent on the surface. It is proposed to employ aqueous emulsions of preservatives in the next phase of the work to assess their suitability in the excessively moist climate of Assam.

BIHAR

3. ASOKAN PILLAR, KOLHUA, DISTRICT MUZAFFARPUR.—The removal of moss and a number of brown stains of a ferruginous composition from the surface of the pillar was effectively carried out with the help of ammonia and reducing agents. Soluble salts on the lower part of the column were also extracted.

4. EXCAVATED REMAINS, NALANDA, DISTRICT PATNA.—Many stucco figures on the exterior walls of the temples on the north-eastern and south-eastern corners showed fresh signs of decay due to exposure to rains and the effect of salts rising from the ground and from behind the brickwork. The figures were consolidated after the removal of the soluble salts. Cracks and loose plaster were repaired and strengthened.

DELHI

5. RED FORT, DELHI.—Chemical treatment to the marble surface of the structures of the Diwan-i-Khas (pi. LXII), Moti-Masjid and Bhadon-pavilion was carried out in connexion with the inauguration of the programme of *Son et Lumiere*. Stains on the marble pillars were reduced with the help of alcohol and hydrogen peroxide. Detergents like Lissapol were also put to use. Growth of moss on the exterior of the structure was eliminated and the metal cupolas on the *chhatris* were cleared of disfiguring coatings and corrosion-products. A gold-coloured composition was thereafter applied. The work has been kept in progress.

The chemical treatment of the golden paintings on the panelled ceiling of the Diwan-i-Khas was continued for some time. The back marble screen was also cleaned of a greasy deposit with the help of emulsifiers and preserved. Floral designs in gold executed on the marble surface of some pillars and arches were cleared of an overlaying deposit of soot and grease. Since the patterns are intricate and the gold paint is executed on a very thin ground, the work of treatment demanded much skill and patient labour.

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[1] Information from: 26, the Director of Archaeology and Museums, Rajasthan State; and the rest, the Archaeological Chemist of the Survey.

GOA

6. GROUP OF MONUMENTS, GOA VELHA.—In keeping with the works of repairs to the structures and general improvement to the condition of the long-neglected monuments of Goa (above, p. 95). the altars, statues and other decorative members in the interior were also treated for preservation (pis. LXIII and LXIV A). Large-scale cleaning, dusting and varnishing were carried out to the gilded altars in the Basilica of Bom Jesus, Se Cathedral and Church of St. Francis of Assisi. In the Se Cathedral, on the altar of the Blessed Sacrament Chapel and the friezes on the side-wall in particular, the gilding was renewed with gold leaves. The framed paintings on the walls and ceilings together with a number of those on canvas were cleaned and preserved and the wooden frames repaired wherever necessary. The statues in marble and wood were cleaned and the woodwork of the buildings painted.

GUJARAT

7. DARBARGARH, SIHOR, DISTRICT BHAUNAGAR.—The limewash on the paintings on the walls of the east and west verandahs of the third floor was removed and the paintings cleaned and preserved. The paintings on the wooden ceiling of the northern roof in third floor, depicting dance-scenes, were also cleaned and preserved.

MADHYA PRADESH

8. VISHNU TEMPLE, JANJGIR, DISTRICT BILASPUR.—The sculptures on the northern. wall of this temple, covered over with a thick growth of moss and lichen, were cleaned and a coat of fungicidal solution was applied for preservation.

9. GROUP OF TEMPLES, KHAJURAHO, DISTRICT CHHATARPUR.—In this group the Lakshmana temple and its four subsidiary shrines and the Matangesvara temple remained under chemical treatment for eradication of a thick crust of moss and lichen, removal of soluble salts and very tenacious coatings of limewash. The occurrence of the coatings of limewash and lichen above or below each other made the work complicated but was successfully carried out by the softening of the limewash with prolonged soaking in water followed by reaction with very dilute hydrochloric acid. Fungicidal treatment with pentachlorophenol was found to be equally effective as with zinc silicofluoride. An aqueous emulsion of vinyl acetate was used as a surface-preservative with satisfactory results.

10. ROCK-CUT CAVES, BAGH, DISTRICT DHAR.—The soot-coated paintings in Cave 2 and some painted surface area in Cave 4 were subjected to chemical treatment. Work on the painted remains in Cave 2 was time-consuming especially on areas where the pigments had been burnt. The pigment-layer, though thinned out and scanty at places, was uncovered and consolidated and the wrinkled portions were made smooth and fixed back to the ground.

11. MAHARAJA MAN SINGH'S PALACES, FORT, GWALIOR.—The paintings on walls executed on lime-plaster had faded at places. The dusty and fatty deposits covering the paintings were removed and the paint-layer strengthened and preserved. The cleaning brought out bright colours of the paintings on the ceiling of the interior gate.

12. TELI-KA-MANDIR, FORT, GWALIOR.—The work of eradication of vegetation-growth and layers of limewash from the surface of the temple and its carvings was almost completed. Fungicidal treatment was carried out with zinc silicofluoride and it was followed by application of aqueous vinyl acetate emulsion as preservative.

13. YASODHARMAN'S PILLAR, MANDASOR.—The two sandstone pillars, each about 12 m. long, now lying on the ground, were overgrown with moss and lichen which com pletely hid the inscriptions. Chemical treatment was carried out to eradicate the over growth and clean the inscriptions.

MADRAS

14. KAILASANATHA TEMPLE, KANCHIIPURAM, DISTRICT CHINGLEPUT.—The work of eradication of moss and lichen and other vegetation-growth from over the stone surfaces of the *vimana, gopura* and sculptures, both inside and outside, on the temple was com pleted. A suitable fungicidal was also applied.

The work of filleting the broken edges of the fragments of paintings on the walls of the small shrines around the temple were taken up and kept in progress.

15. VAIKUNTHA-PERUMAL TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—The work of cleaning the sculptures on the walls of the *prakara*, covered with a thick coat of limewash, was taken up. The work is in progress.

16. DHARMARAJA-RATHA, MAHABALIPURAM, DISTRICT CHINGLEPUT.—The mono-lith covered over with vegetation-growth and soluble salts was cleared and the stone surface given a fungicidal treatment.

17. BRIHADISVARA TEMPLE, GANGAIKONDACHOLAPURAM, DISTRICT TIRUCHCHIRA-PPALLI.—The epigraphical records on the outer walls of the main shrine were cleaned and preserved.

MAHARASHTRA

18. BIBI-KA-MAQBARA. AURANGABAD.—The floral paintings on the walls of the mosque were taken up for chemical treatment. The broken edges of the plaster were filleted. The work is in progress.

19. ROCK-CUT CAVES, AURANGABAD.—The fragments of paintings were treated by the removal of the old preservative coat, cleaning of the paintings with suitable chemicals and then preserving them with fresh preservatives.

20. ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—The work of filleting of loose paint-films and plaster in Caves 2, 4 and 16 was attended to. The filleted edges were suitably tinted.

21. ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.—Extensive filleting work was done to the paintings in the Jagannatha-Sabha of Cave 33.

22. ELEPHANTA CAVES, GHARAPURI, DISTRICT KOLABA.—The nine panels in the main cave were taken up for chemical treatment. The work involved the removal of vegetation-growth, soluble salts and application of a fungicidal material and a suitable preservative.

. 23. SHANWARWADA, POONA.—The paintings on the walls of the gateway, covered with dust, dirt, soot, oil and limewash were removed and the painted surface rendered brighter.

24. ROCK-CUT CAVES, BHAJA, DISTRICT POONA.—The fourteen commemorative *stupas* as well as the one in the *chaitya-cave* were treated for the removal of soluble salts and Preserved.

MYSORE

25. DARYA-DAULAT-BAGH, SERINGAPATAM, DISTRICT MANDYA.—Paintings in the north-east enclosure of the ground floor were cleaned chemically and the white back ground of the border designs brought out in its original brilliance.

PUNJAB

26. BRAJRAJ-BIHARI TEMPLE, NURPUR, DISTRICT KANGRA.—The paintings on the walls and door-leaves and-frames were taken up for cleaning and preservation (pi. LXIVB). The varnish layer was removed with the help of solvents containing ethyl-cellosolve to expose the painted surface for further treatment; at places butyl lactate was utilized. Triethanolamine in alchohol with a touch of water was found helpful in taking off accretions of dirt, greasy substances and soot. Petrol and turpentine were employed to dilute the effect of solvent washings. Polyvinyl acetate solution in toluene was used as preservative.

RAJASTHAN

26. BHOJASALA, AMBER, DISTRICT JAIPUR.—The paintings in the lower portion of the wall in three rooms of this building were cleaned, the loose film refixed and the broken edges of the plaster strengthened by filleting.

UTTAR PRADESH

28. CHINI-KA-RAUZA, AGRA.—The work of removal of the overlying deposit of dust, varnish, spot and marks left by bats from the surface of the paintings was continued. Several organic solvents and emulsifiers were put to use. The work is coming to a close.

29. GROUP OF TEMPLES, BAIJNATH, DISTRICT ALMORA.—Chemical treatment involving removal of age-old deposits of lichen and limewash was completed. The friable stones of the temples were consolidated with resin-solutions. The temples are now in a good state of preservation.

30. NIRVANA TEMPLE, KUSINAGAR, DISTRICT DEORIA.—The hair-cracks appearing on the reclining image of the Buddha, covered with gold leaf, was carefully filled up with vinyl acetate solution to consolidate the affected portions.

31. DHAMEKH-STUPA, SARNATH, DISTRICT VARANASI.—The carvings on this important Buddhist structure had been exfoliating due to extensive crystallization of soluble salts. To reduce the quantity of salts from the area most affected by the expansive forces of salt-crystallization, the structure was subjected to the treatment of paper-pulp.

To prevent formation of moss fungicidal treatment was followed by the application of zinc silicofluoride. The work was kept in progress.

WEST BENGAL

32. SYAMARAI TEMPLE, VISHNUPUR, DISTRICT BANKURA.—The terracotta plaques on the walls of the northern verandah of this brick temple, covered profusely with soot, limewash and vegetation-growth, was cleaned with the help of ammonia, tergitol and Lissapol detergents. Fungicidal treatment followed. The decorative plaques now present a very pleasing look.

33. GUMTI GATE, GAUR, DISTRICT MALDA.—The polychrome enamel-decoration on this monument, which had become disfigured with moss and flaking at places, was brought under chemical treatment. Soluble salts which constituted the main cause of such flaking were extracted, loose enamel-tiles were fixed back with resins, and the enamels were exposed to full view. Most of the work of chemical treatment was completed. Trichloracetic acid was found useful in eradicating some resistant stains left by moss.

TREATMENT OF EXCAVATED OBJECTS AND MUSEUM-EXHIBITS

During the year under report, eight thousand nine hundred and forty-eight antiquities, made variously of iron, lead, silver, copper, bronze, etc., were chemically treated and preserved in the laboratory of the Archaeological Chemist, Dehra Dun. Of these eight thousand were coins from the hoard of over ninety thousand coins received last year.

Oil-paintings, wood-panel paintings and gilded woodwork in the three churches of Goa Velha were subjected to elaborate chemical treatment and preservation and very satisfactory results were obtained.

In the laboratory of the Department of Archaeology, West Bengal State, various objects obtained from explorations and excavations were treated.[1]

ANALYSES AND RESEARCH

1. GEOCHRONOLOGICAL STUDIES.—Investigation on laterites from Bhubaneswar and other sites was continued and some more specimens were collected for further investigation.

Rock-specimens from several sites such as Ajanta and Ellora were examined with a view to determining the mechanism of weathering processes.

Several specimens of soil were subjected to chemical analysis for the determination of their composition and methods of formation and deposition. Mechanical analysis of soil-specimens was also carried out for the study of the climatic conditions prevailing at the time of their deposition.

2. CHEMICAL ANALYSES.—Ninety-eight specimens comprising plaster, mortar, glazes, painted plaster, clay, metals, rocks and organic materials, etc., were received for detailed examination. In all, one hundred and sixty including sixty-two brought forward from the previous year were taken up for detailed chemical analysis. Out of these one hundred and eleven were chemically analysed and examined and reported upon.

A large number of metallic objects and pottery-specimens from Lothal were chemically examined and analysed and detailed reports were prepared on this work. Similarly several specimens of stone and mortar from the Qutb-Minar, Delhi, were analysed with a view to determining the causes of decay of masonry. In addition, a number of pottery-specimens from Prabhas-Patan, Gujarat, were scientifically examined and several specimens of plaster and flooring-material from the Kausambi excavations were analysed in detail.

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[1]Information from the Director of Archaeology, West Bengal

VIII. ARCHAEOLOGICAL GARDENS[1]

ANDHRAPRADESH

1. HILL-TOP, NAGARJUNAKONDA, DISTRICT GUNTUR.—In continuation of previous work (1963-64, p. 127), more rocky land was brought into use and plantations were carried out judiciously to create a natural landscape. Particular attention was paid to the sites around the museum-building, rest-house and reconstructed monuments. Additional land around the museum-building was cleared for turfing and much clearance was done around the reconstructed Simhala-vihara and megaliths in the second enclosure. Progress in the gardening-operations was retarded due to the non-availability of soil and inadequate water-supply, but arrangements were made partly to overcome the obs tacles. In spite of the prevailing odds informal planting of shrubs and trees at appro priate places was carried out to an appreciable extent. A nursery for the propagation and raising of plants was laid out in the second enclosure.

Opposite the rest-house, in the first enclosure, an informal pool was created in a natural depression in the rock by the sealing off of sources of leakage with rubble-masonry, wherever necessary, and the grouting of the joints in the boulders and rock-bed to hold water.

A small garden around the buildings at'11/2 mile-stone'was also maintained in a presentable condition.

BIHAR

2. EXCAVATED REMAINS, KUMRAHAR, PATNA.—To augment the existing water-supply and to ensure a uniform distribution of water in the different sectors of the garden, new pipes and pipe-fittings were laid and the old pumping-sct was replaced by a new one.

3. EXCAVATED REMAINS AND ARCHAEOLOGICAL MUSEUM, NALANDA, DISTRICT PATNA.—The irrigation system was improved by the laying of pipe-lines.

DELHI

4. HAUZ-KHAS, DELHI.—Plants of roses were introduced in the beds and the gaps in hedges were filled up. Besides, annuals were also planted in beds in the front areas.

5. KOTLA FIRUZ SHAH, DELHI.—The front portion of the garden was improved by the addition of groups of ornamental shrubs and beds of annuals were introduced around the well.

6. QUTB ARCHAEOLOGICAL AREA, DELHI.—The lawns in the upper portion were returfed. Ornamental shrubs were planted in groups in the shrubberies. The wild-park was beautified by the introduction of some new plants.

7. RED FORT, DELHI.—Some changes in the layout of the garden in the Diwan-i-Khas had to be done for the introduction of the *Son et Lumiere* spectacles. As a result, areas occupied by shrubberies were converted into lawns, approach-paths were shifted and re-aligned, trees which were hiding the view of the buildings were removed and branch es of others were lopped off.

'Information from: 14, the Director of Archaeology and Museums, Jammu and Kashmir State; 15, the Director of Archaeology, Kerala State; and the rest, the Superintendent and Assistant Garden Superintendents of the Survey.

8. 'ARAB-KI-SARAI, NEW DELHI.—Greviellia, calistemen, etc., were planted along the approach-roads and bougainvillaeas of different shades were introduced. Shrubs were planted to enclose the boundary of the recently-turfed area on the Nizamuddin Colony side.

9. HUMAYUN'S TOMB, NEW DELHI.—In addition to the returfing of the lawns in the wild-park area and on the front side of the tomb ornamental beds and plants of ornament al shrubs were introduced in the former area. Shrubs-cwra-hedges were planted in the outside area meant to be a picnic-spot. Plants of water-lily were grown in the central pool. The garden was kept neat and clean throughout the year. Propagational work in the nursery here was improved and increased. About one thousand roses were added and cacti, crotons and palms increased by propagation, whereas *thujas* and *sarus* brought from outside were added to the collection.

10. JANTAR-MANTAR, NEW DELHI.—Besides keeping the water-channels clean and the garden in trim condition, rose-beds were introduced.

11. LODI TOMBS, NEW DELHI.—Lawns around the central tomb were returfed. Some annual beds were introduced in the lawns in the area of Muhammad Shah's tomb and dead and ugly trees removed and cuttings of roses planted near the tomb.

12. TOMB OF SAFDARJANG, NEW DELHI.—Ornamental stone-edging in the rear plots was completed. Gaps in the rose-beds and shrubs were filled up by new plants. Cannas were planted along the borders of the approach-roads.

GOA

13. MONUMENTS, GOA VELHA.—Horticultural operations around the group of churches were undertaken with a view to laying out a decent and ornamental garden. The work was completed on the eve of the exposition of the relics of St. Francis Xavier held in December, 1964, in spite of different problems like scarcity of water, labour and material on the spot and the unevenness and the hardness of the lateritic soil. Heavy machinery like bulldozers, tipper-trucks, trailors etc., had to be employed. The garden, extending to upwards of 6.5 hectares, has now changed the very face of the former rugged landscape, thus bringing in an atmosphere of serenity. The layout of the garden was mostly formal, consisting of lawns, flower-beds, hedges and trees at appropriate places. Many new varieties of plants, which would stand the tropical and moist climate, were introduced.

JAMMU AND KASHMIR

14. MUSEUM, SRINAGAR.—A garden with lawns, flower-beds, paths and fountains was laid in front of the Museum and sculptures were displayed therein on suitable pedestals.

KERALA

15. MISCELLANEOUS GARE>ENS.—The fruit-and-flower-gardens already started around the monuments were maintained and developed.

MADHYA PRADESH

16. GROUPS OF TEMPLES, KHAJURAHO, DISTRICT CHHATARPUR.—For the proper distribution of water in the gardens new pipe-lines were laid. The lawns were returfed and the gaps in plantations filled up.

MAHARASHTRA

17. SHANWARWADA, POONA.—During the past years much difficulty was experienced in irrigating the garden effectively. Not only was the public water-supply found insufficient but the old distribution-system in the garden was also defective. To augment the water-supply from the existing well, an oil-engine was installed therein and arrangements were made side by side to install an electric motor pumping-set. To set right the distribution-system of water, pipe-lines were re-aligned.

In addition to making arrangements for returfing the plinth-areas in the central portion with Calcutta *dub*, in place of *poa* grass with a better effect, many new plants were introduced at appropriate places.

MYSORE

18. 'An IT RAUZA, BIJAPUR.—An ornamental garden was laid out in terraces, following the lie of the land, with lawns, flower-beds, shrubberies, hedges and peripheral plantation and a big orchard comprising *sapotas*, guavas, pomegranates, figs, bananas, etc., was added towards one side. A small nursery of plants was also maintained within the orchard-area. Mosaic-finished concrete benches were provided in the garden for visitors.

19. ARQUILLA, BIJAPUR.—The moat by the side of the Gagan-Mahal was taken up for beautification. The work is in progress under a comprehensive gardening plan prepared for its proper development.

20. ASAR-MAHAL, BIJAPUR.—The damages caused to the garden during the unpre cedented rains were made good. Some old trees were removed. A few mosaic-finished concrete benches were appropriately placed for the visiting public.

21. GAGAN-MAHAL, BIJAPUR.—The re-orientation effected in the layout of the garden appreciably enhanced its beauty. Many new rockeries, flower-beds, shrubberies, etc., were incorporated.

22. GOL-GUMBAD, BIJAPUR.—Many new varieties of bulbous plants and cacti-succulents were introduced in the nursery-stock and the damages caused due to the flood were made good. A good collection of hibiscus varieties was planted on either side of the road leading to the garden-office. Arrangements were made for planting a huge collection of novel varieties of bougainvilleas.

For the convenience of the ever increasing visiting public many mosaic-finished concrete benches were introduced at appropriate places in the garden.

23. IBRAHIM RAUZA, BIJAPUR.—Much of the plantation was lost owing to the water stagnating in the garden due to heavy rains and floods. Operations to restore the garden to its former shape were carried out as soon as the water receded.

24. JAMI'-MASJID, BIJAPUR.—Some old tamarind trees were severely lopped and brought to shape. A set of cement-concrete tubs planted with good varieties of bougain villeas were placed along the boundary-wall to cover its drab appearance.

25. JOD-GUMBAD, BIJAPUR.—Some of the old trees were properly lopped and brought to shape. Owing to heavy rains, the entire orchard excepting the plants of *sapotas* and guavas had perished. Arrangements were made for replantation of the orchard with plants that would stand in excessive water.

26. TOMB OF SIKANDAR SHAH, BIJAPUR.—A new garden of small patches of lawns, hedges lining the paths, a few rockeries underneath the old trees and stray plantation was

laid around the monument after the removal of the rank vegetation. A network of lines was also laid out for effective and adequate irrigation.

27. HOYSALESVARA TEMPLE, HALEBID, DISTRICT HASAN.—The work of laying out an ornamental garden with paths, shrubberies, lawns? hedges, flower-beds, including laying out a network of pipe-lines, etc., was started.

28. KESAVA TEMPLE, SOMANATHPUR, DISTRICT MYSORE.—Horticultural operations for laying out an ornamental garden were started.

RAJASTHAN

29. ANASAGAR BARADARI, AJMER.—Besides returfing of the lawns, roses, canna-beds and annual beds were laid out and the garden was kept in a very satisfactory condi tion.

30. PALACES, DIG, DISTRICT BHARATPUR.—In addition to the existing plants, annual, rose and jasminum *(mogra)* beds were introduced. The lawns were maintained properly and the fountains run during the fairs and festivals.

UTTAR PRADESH

31. FORT, AGRA.—A new 7-5 h.p. electric pumping-set was installed in the well at the Akbari Mahal to augment water-supply to the garden.

32. 'IDGAH, AGRA.—For proper distribution of water to all parts of the garden an overhead tank was provided and pipes laid with hydrants at appropriate points. Provi sion of stone-edging along the roads that wils started was partially completed.

33. KHAN-I-'ALAM, AGRA.—Plants of different varieties were raised in the beds of the nursery. Fruit-plants were grown and the dead ones replaced. A portion of the conservatory of shade-loving plants was renovated.

34. RAM-BAGH, AGRA.—The old pump was replaced with a 10 h.p. split-casing pump for supply of more copious water for irrigation. An ornamental fencing was also fixed around the circular lawn. .

35. AKBAR'S TOMB, SIKANDARA, AGRA.—All the lawns of fore-court comprising about 6 acres of area were returfed with Calcutta *duh-grsiss.* A 10 h.p. turbine electric pumping-set was installed in the well, which had been desilted and repaired last year. To improve upon the existing system of irrigation pipe-lines with hydrants at all the appropriate places were laid and one overhead tank installed.

36. TAJ-MAHAL, AGRA.—Sarao-plants and ornamental trees on either side of the main canal which had outlived normal span of their lives were replaced with new healthy ones.

37. GROUP OF MONUMENTS, FATEHPUR-SIKRI, DISTRICT AGRA.—With electricity now available at Fatehpur-Sikri, a new 12-5 h.p. electric motor pumping-set was put up in place of the old diesel engine. Regular water-supply to the gardens has now been ensured. An ornamental fencing around the lawns in front of the Dak Bungalow was provided.

38. EXCAVATED REMAINS, KUSHTNAGAR, DISTRICT DEORIA.—Regrassing of the old lawn was undertaken.

39. RESIDENCY BUILDINGS, LUCKNOW.—A pipe-line was laid inside the woodland area for the first time for proper irrigation of this area.

40. EXCAVATED REMAINS AND ARCHAEOLOGICAL MUSEUM, SARNATH, DISTRICT VARANASI.—All the fitting material required to extend the existing pipe-line, up to the points, where there was no hydrant, were procured to complete the work,

IX. PUBLICATIONS

PUBLICATIONS OF THE SURVEY

1. `ANNUAL REPORT ON INDIAN EPIGRAPHY'.—The Reports for 1956 and 57 and for 1960-61 were published.

2. CORPUS INSCRIPTIONUM INDICARUM SERIES.—Part ii of volume II, *Bharhut Ins-'criptions,* by Heinrich Luders, and volume V, *Inscriptions of the Vakatakas,* by V. V. Mirashi, were published.

3. `EPIGRAPHIA INDICA'.—The following parts were published : part vii (July 1964) of volume XXXV, and parts i to iii (January to July, 1965) of volume XXXVI.

4. `EPIGRAPHIA INDICA—ARABIC AND PERSIAN SUPPLEMENT'.—The number for 1962 was published.

5. 'INDIAN ARCHAEOLOGY—A REVIEW'.—The number of 1961-62 was published.

6. TEMPLE-ARCHITECTURE SERIES.—*Cave-Temples of the Pallavas,* by K. R. Srinivasan, was published.

7. SOUTH INDIAN INSCRIPTIONS SERIES.—Volumes XVII, *Inscriptions collected during* 1904, edited by K. G. Krishnan, and XX, *Bombay-Karnatak Inscriptions,* edited by G. S. Gai, were published.

8. PICTURE-POSTCARDS.—The following sets were reprinted: (1) Ajanta (mono chrome), (2) Belur, (3) Bijapur, (4) Chitorgarh, (5) Ellora, (6) Gwalior Fort, (7) Halebid, (8) Hampi, (9) Khajuraho, (10) Modhera and Patan, (11) Somnathpur and (12) Sravana-belgola. Three new sets, Goa, Lucknow and Ajanta Paintings (in colours), were added.

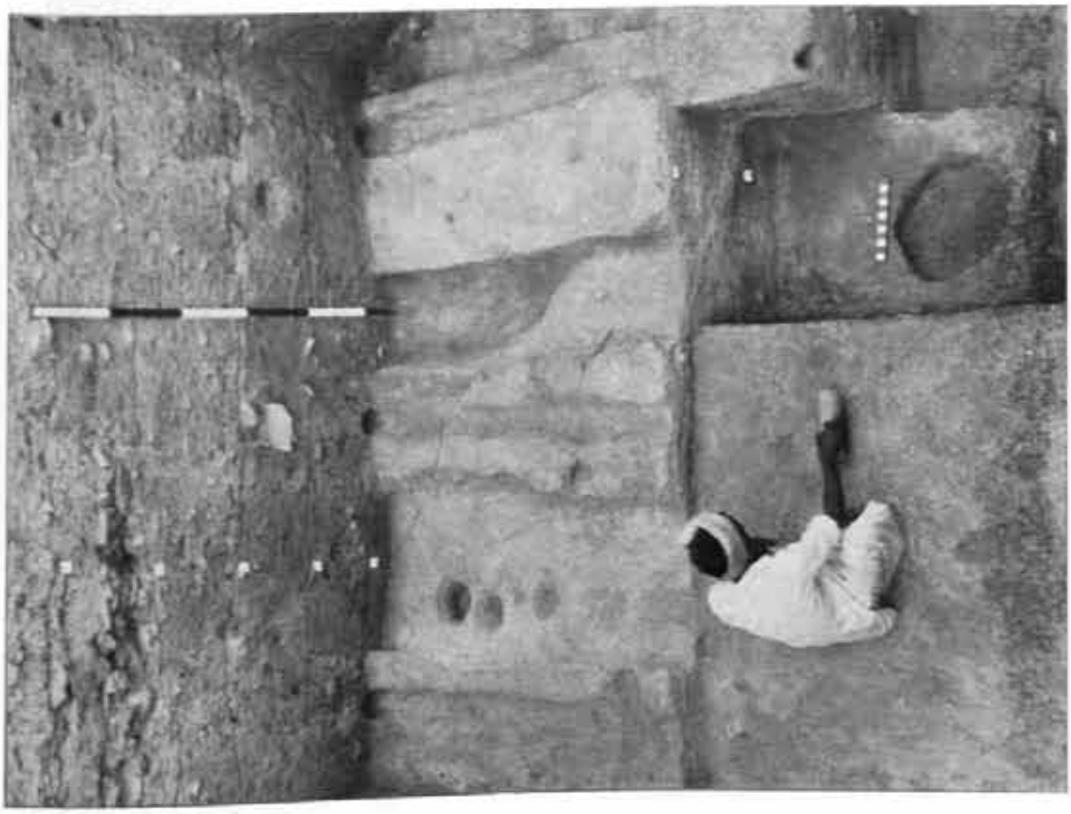
OTHER PUBLICATIONS

9. ANDHRA PRADESH.-The Department of Archaeology, Government of Andhra Pradesh, brought out the following : (1) *An Early Sculpture of Narasimha,* by Abdul Waheed Khan; (2) *Bahmmi Coins in the Andhra Pradesh Government Museum,* by Abdul Wall Khan; (3) *Eastern Chalukyan Temples in Andhra,* by M. Rama Rao; (4) *Medieval History of the Deccan,* by S. K. Sinha; (5) *Salihundam—A Buddhist Site in Andhra* by Dr. R. Subrahmanyam; and (6) *Western Kshatrapa Coins in the Andhra Pradesh Museum* by H. V. Trivedi.

10 RAJASTHAN.-The Directorate of Archaeology and Museums, Rajasthan State, started bringing out in print a bulletin under the name *Researcher.*

11. UTTAR PRADESH.- AN illustrated monograph of Mathura Sculptures, both in Hindi and English, was published.

12. WEST BENGAL.—The Directorate of Archaeology, West Bengal, published *Excavations at Pandu-rajar-dhibi,* by P. C. Das Gupta.

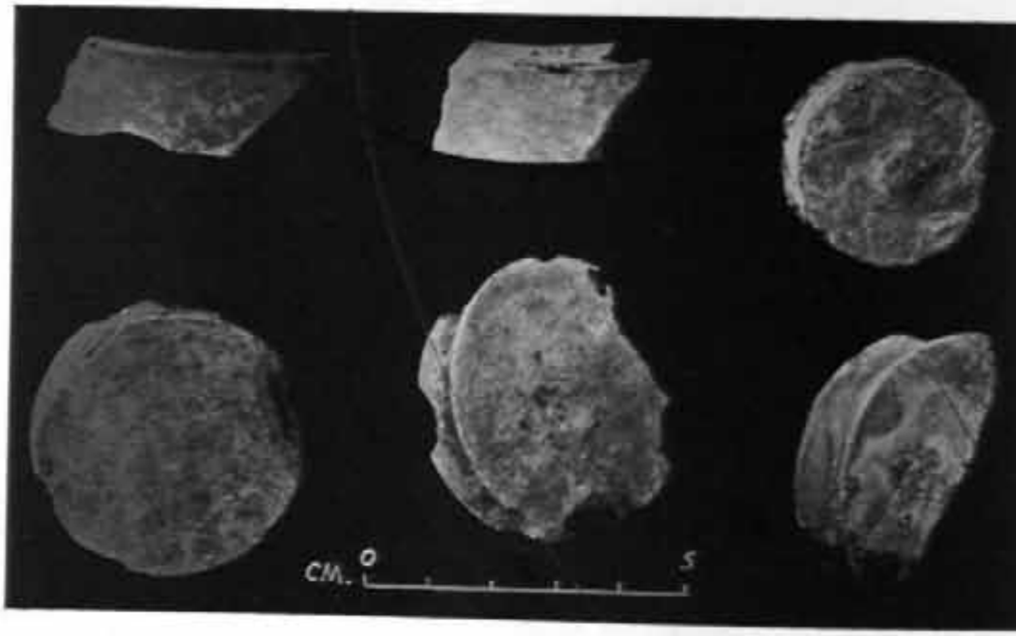


A

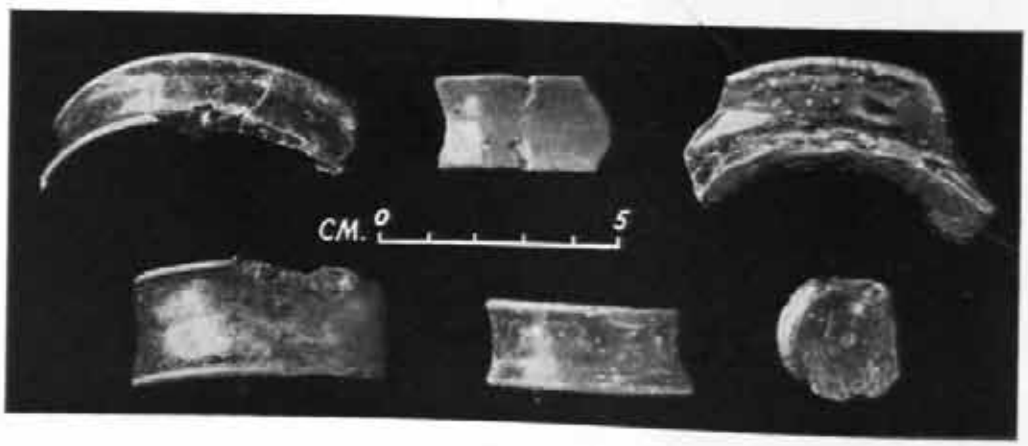


B

Dharanikota : A, *view showing cut-channels in made-up laterite block, Period II*; B, *circular brick structure, Period IV.* *See p. 2*



A



B



C

Dharanikota : A, glass bangles and ear-rings, Period II : B, glass bangles, Period III; C, ivory seal Period VI.
See p. 2

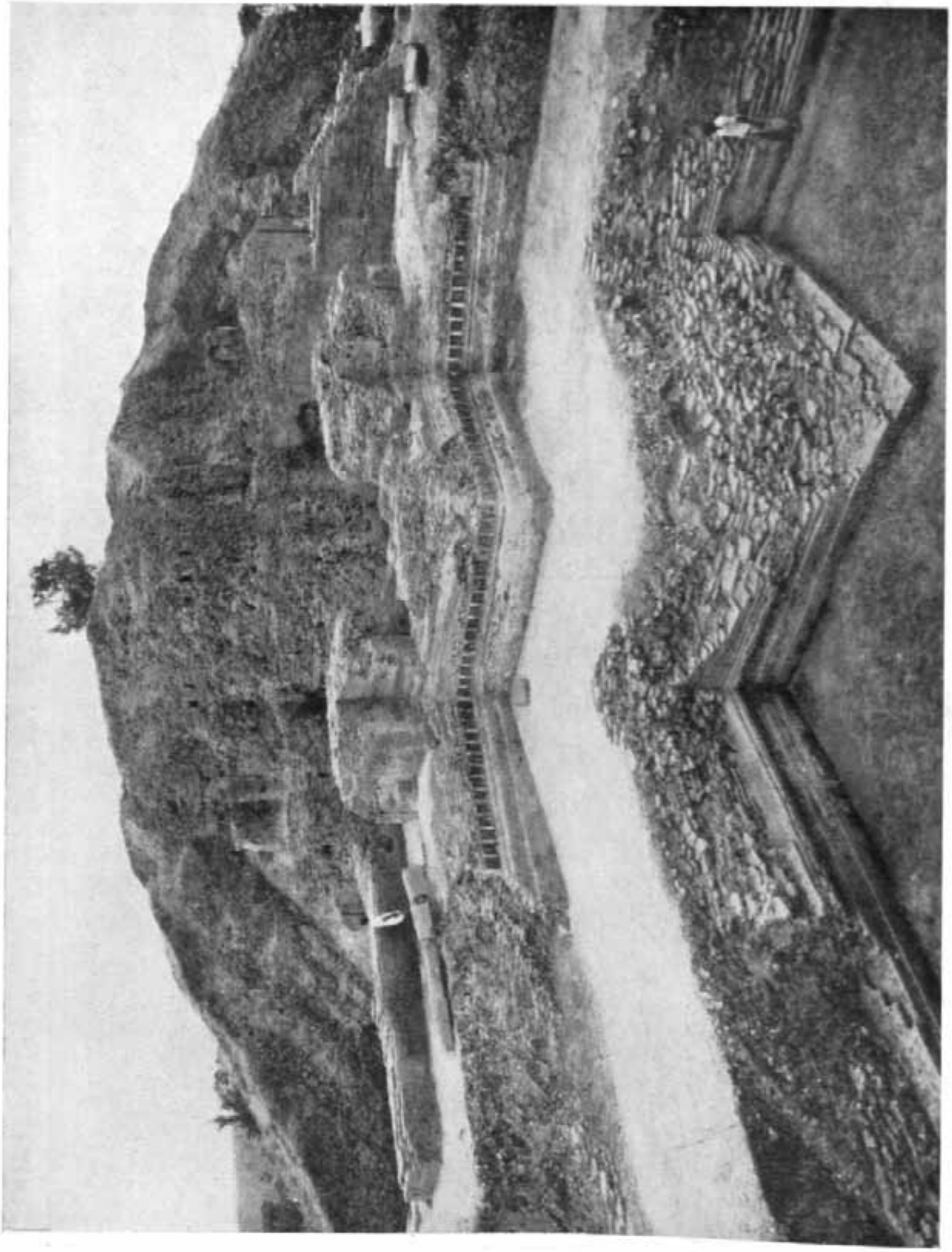


A

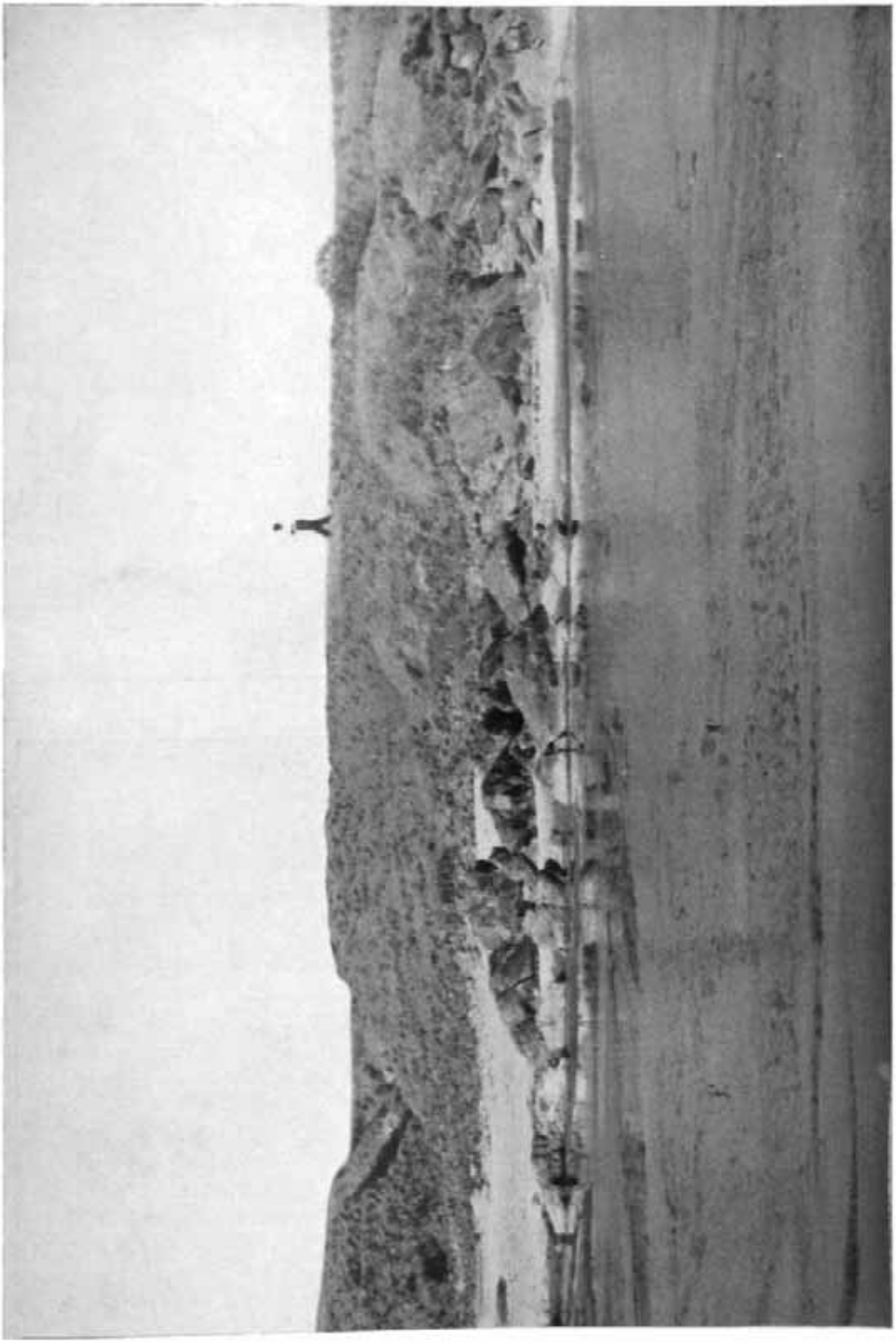


B

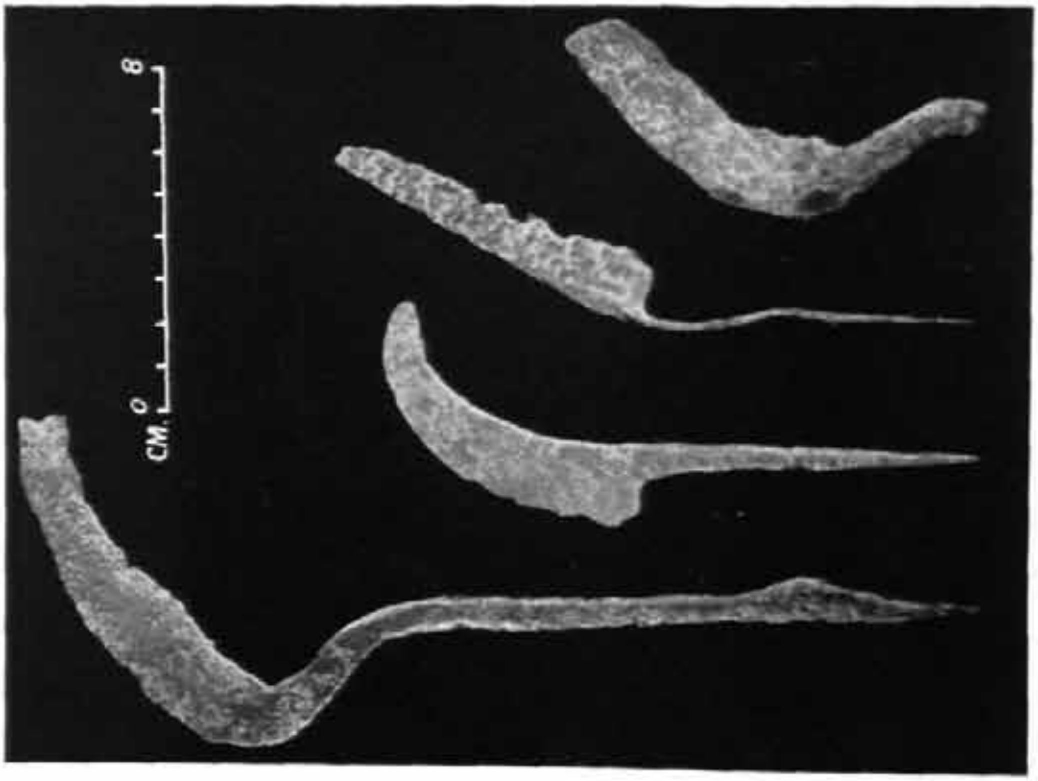
Yelleswaram : terracotta moulds, with their casts in plasticene, of A, *human, and* B, *animal figurines.* *See p. 4*



Antichak : north-eastern part of the stupa with three terraces. *See p. 5*



Saradkel : general view of the mound with the river Tojna in the foreground . *See p. 6*

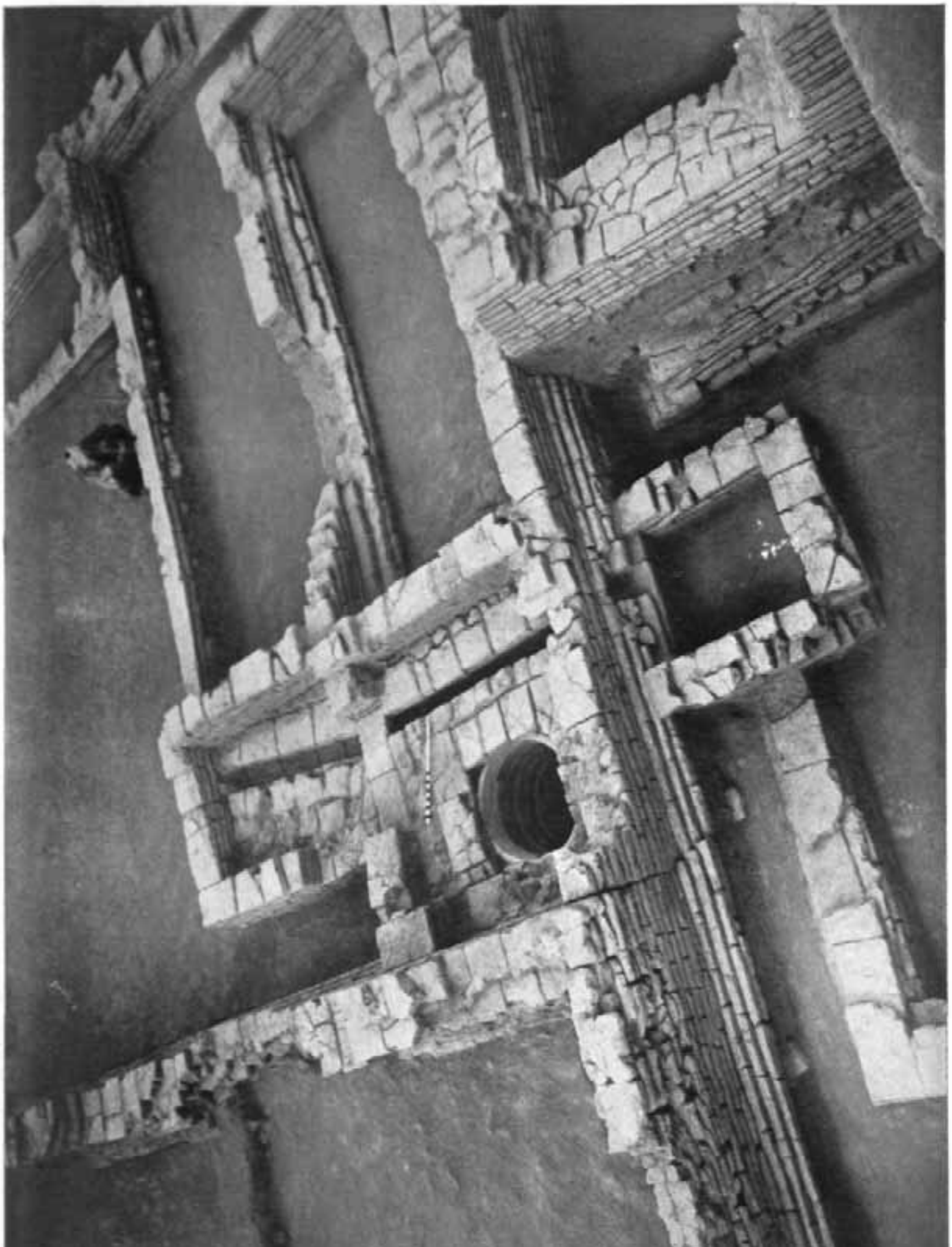


B

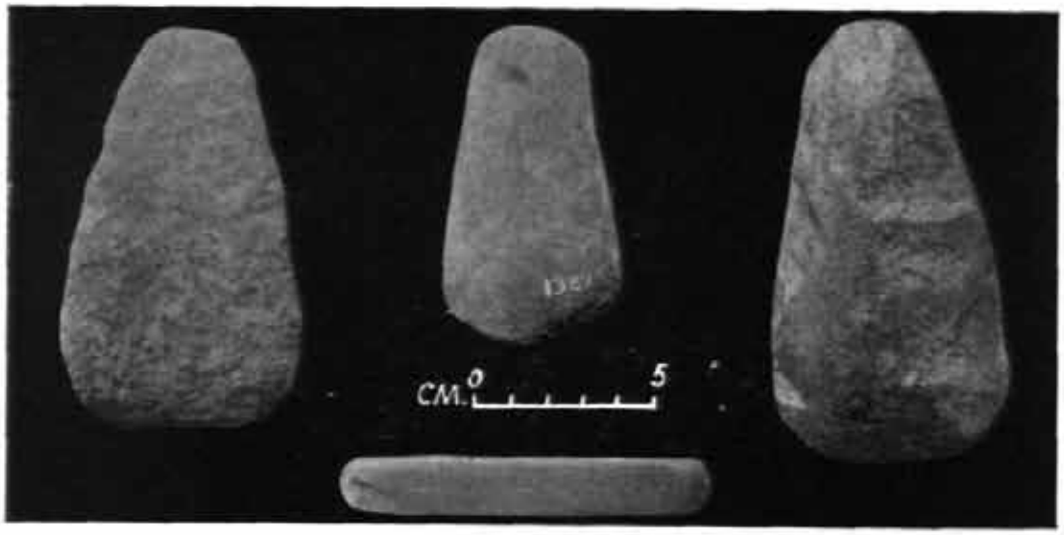


A

Saradkel : iron objects. See p. 6



Chirand : structures, Period III. *See p. 7*



A



B

C



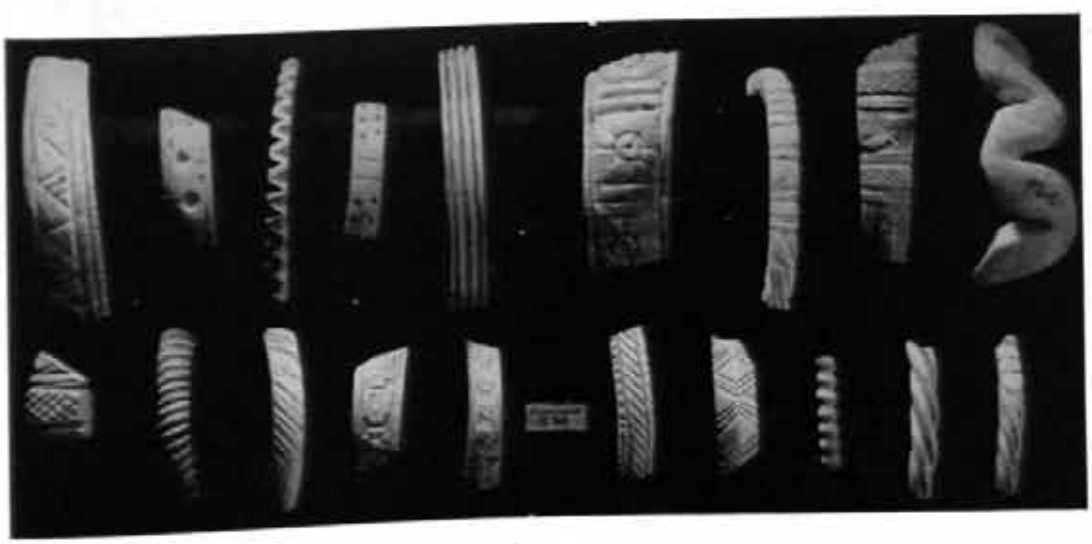


D

Chirand : A, *neolithic celts and chisel, Period II.* B, *terracotta figurines, Period II;* C, *terracotta object Sub-period IB;* D, *terracotta amulet with Surya and attendants, Period III.* *See p. 7*



A

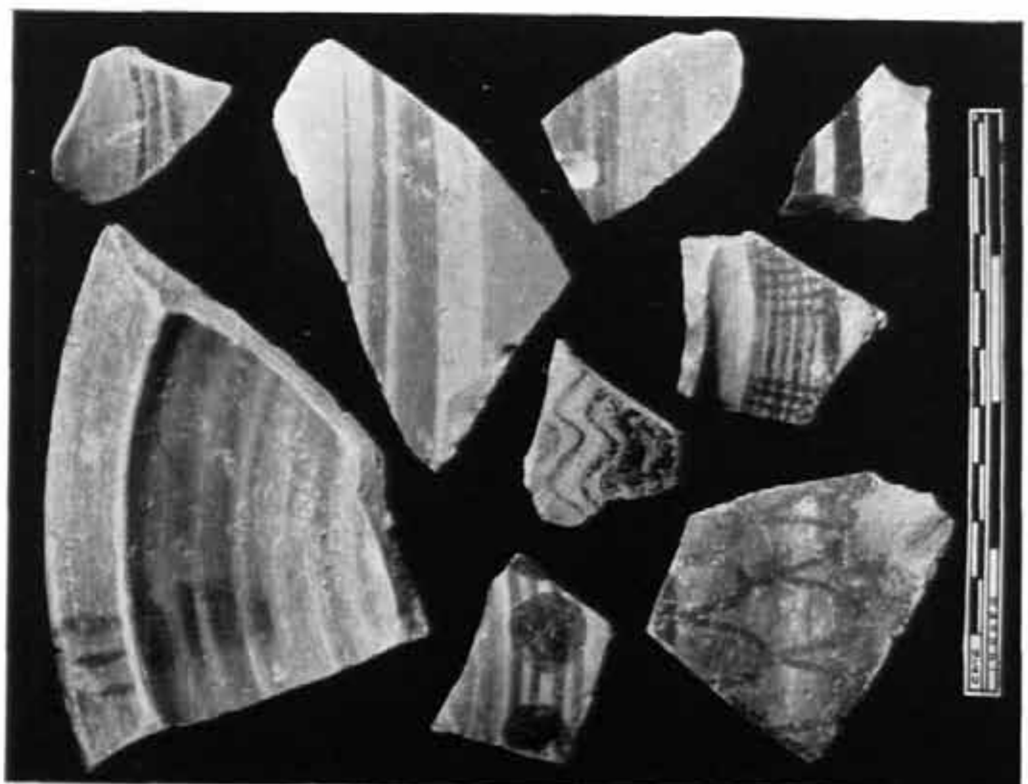


B

Nagara : A, *bone objects, Period I;* B, *conch bangles, Period II.* *See p. 11*



B



A

Surkotda : painted and plain-pottery. *See p. 12*

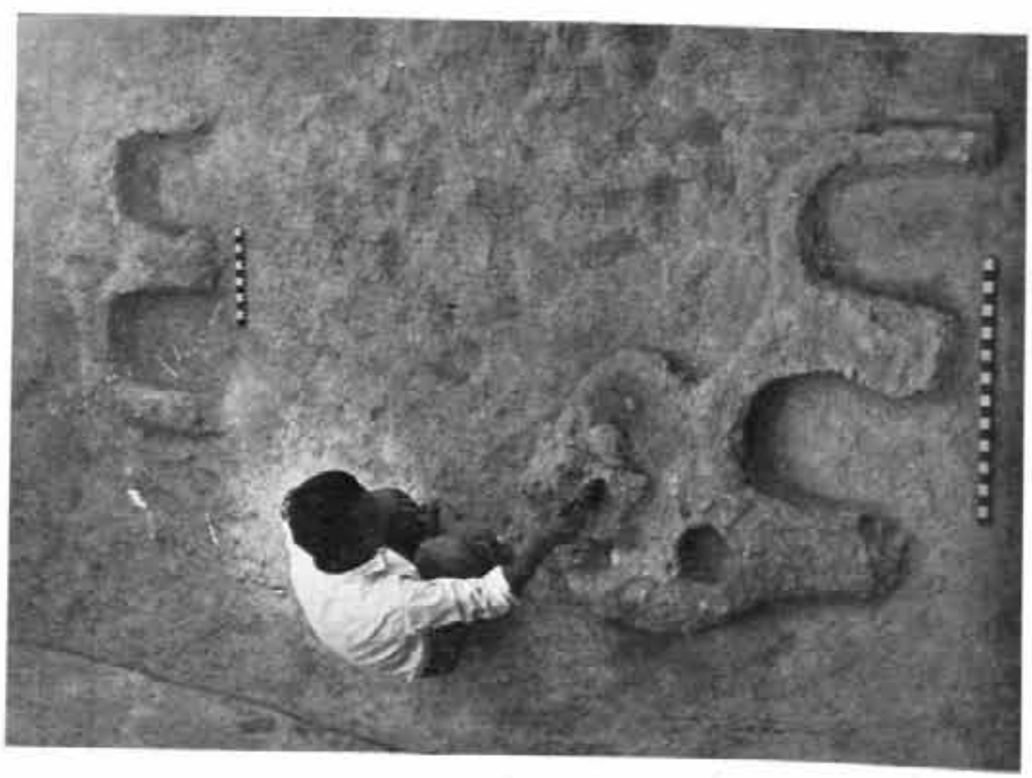


A

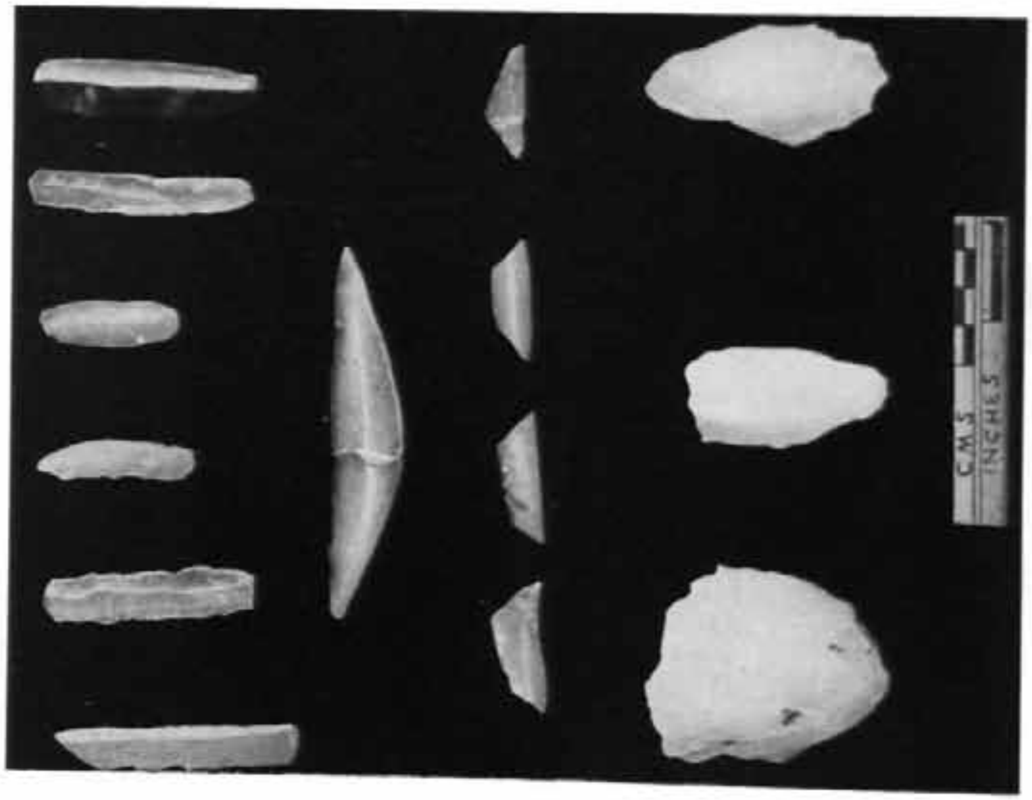


B

A, *Modhera* : *ornamental plinth of torana;* B : *Rani-ki-vav, sculptured gallery. See p. 12*

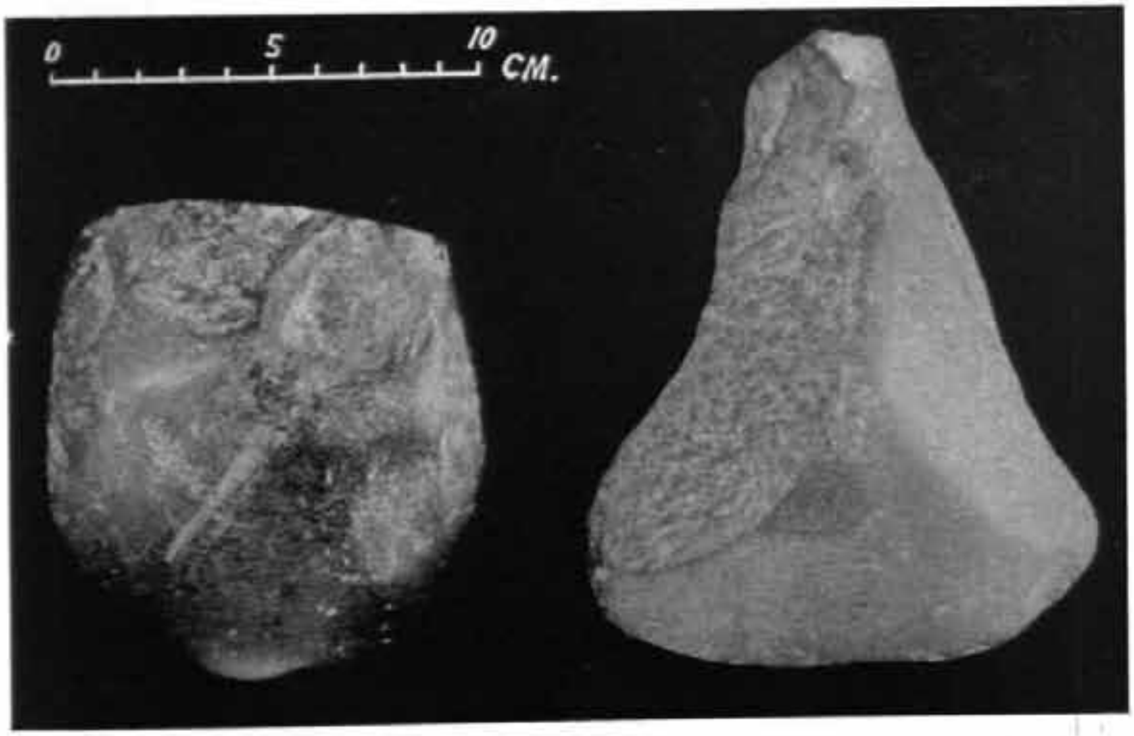


A

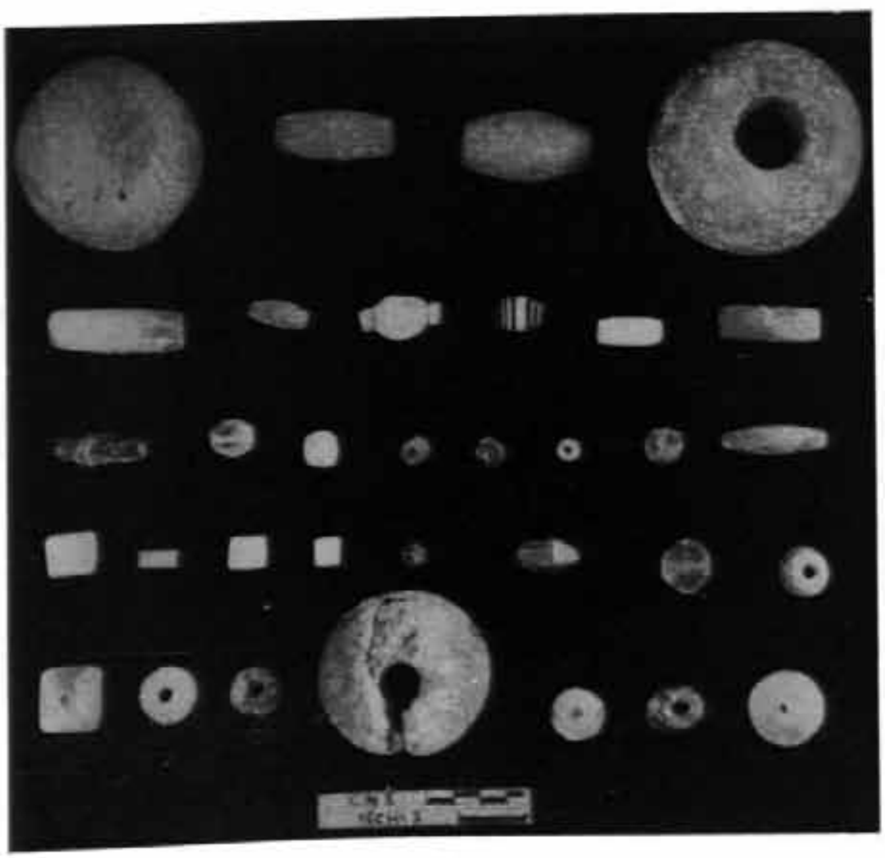


B

Eran : A, hearths, and B, microliths, Period I. See p. 17

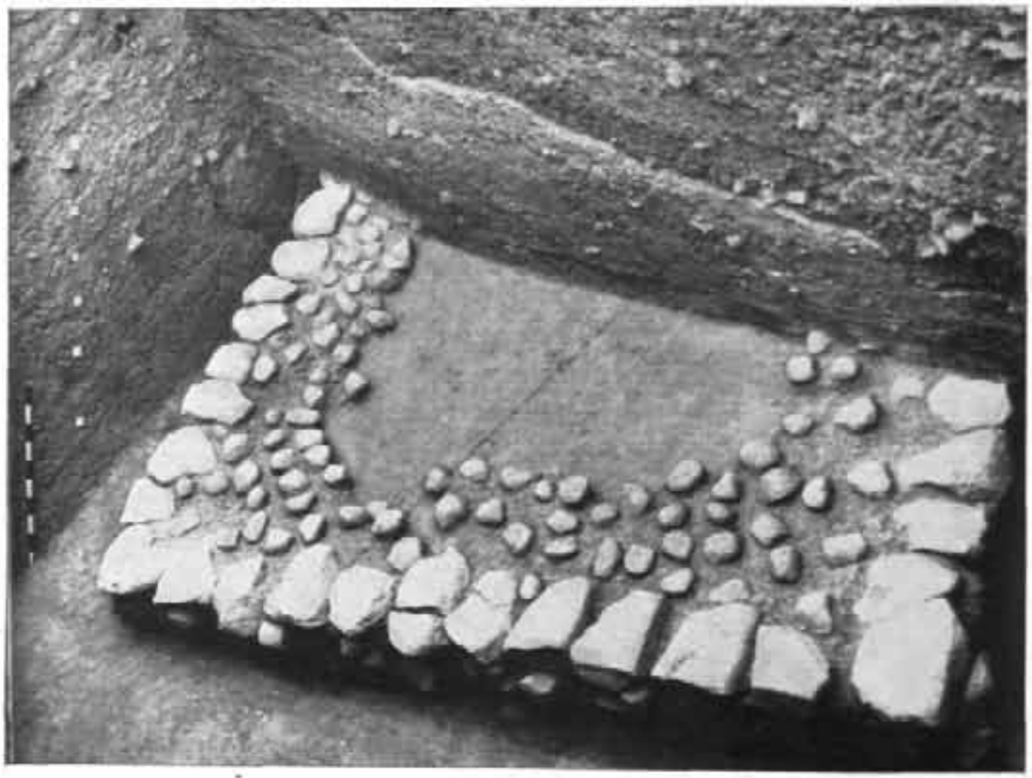


A



B

Eran : A, *stone celts, Period I:* B, *beads, different Periods. See pp. 17 and 18*



A



B

Ujjain : A, *remnants of a structure and* B, *limestone basin disturbed by a later ring-well, Period II. See p. 18*



Besnagar : BSN-1, ring-wells, Period III, with later structures in the background. *See p. 19*

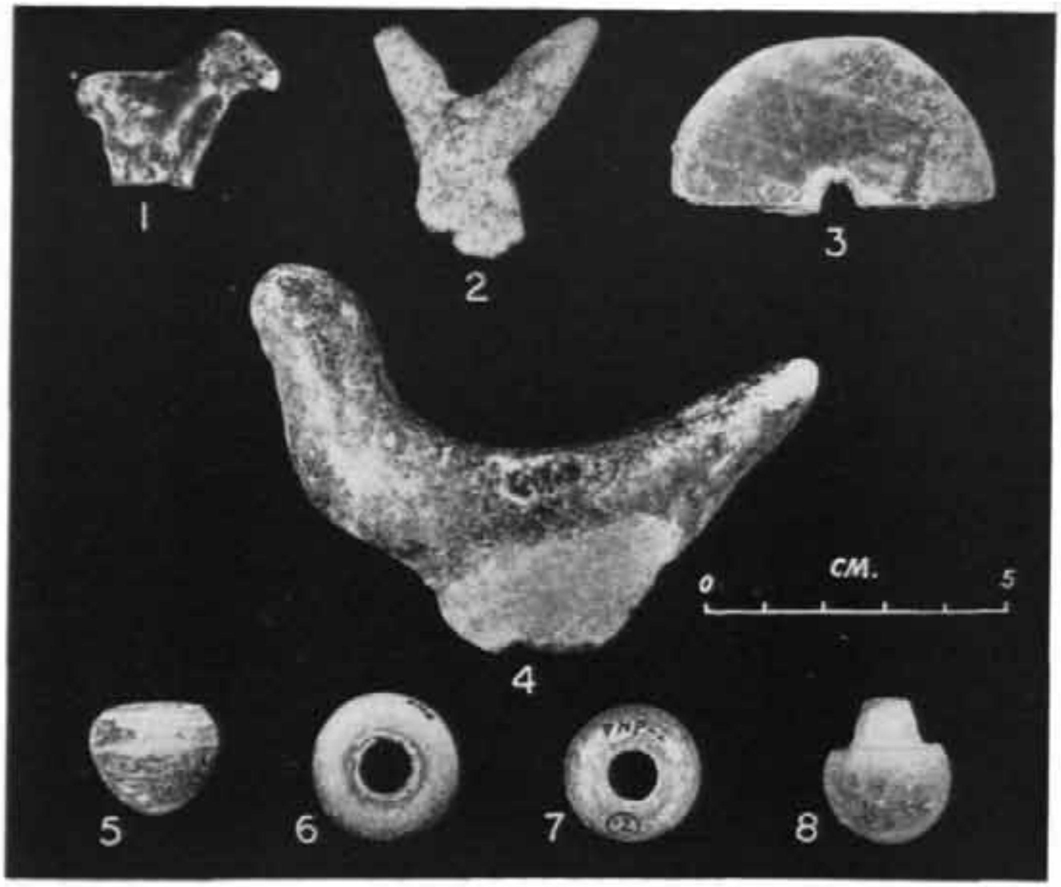


A



B

Besnagar : BSN-3 A, *plan of elliptical temple, and* B, *leaning retaining-wall with the section of inner filling. See pp. 19 and 20*



A

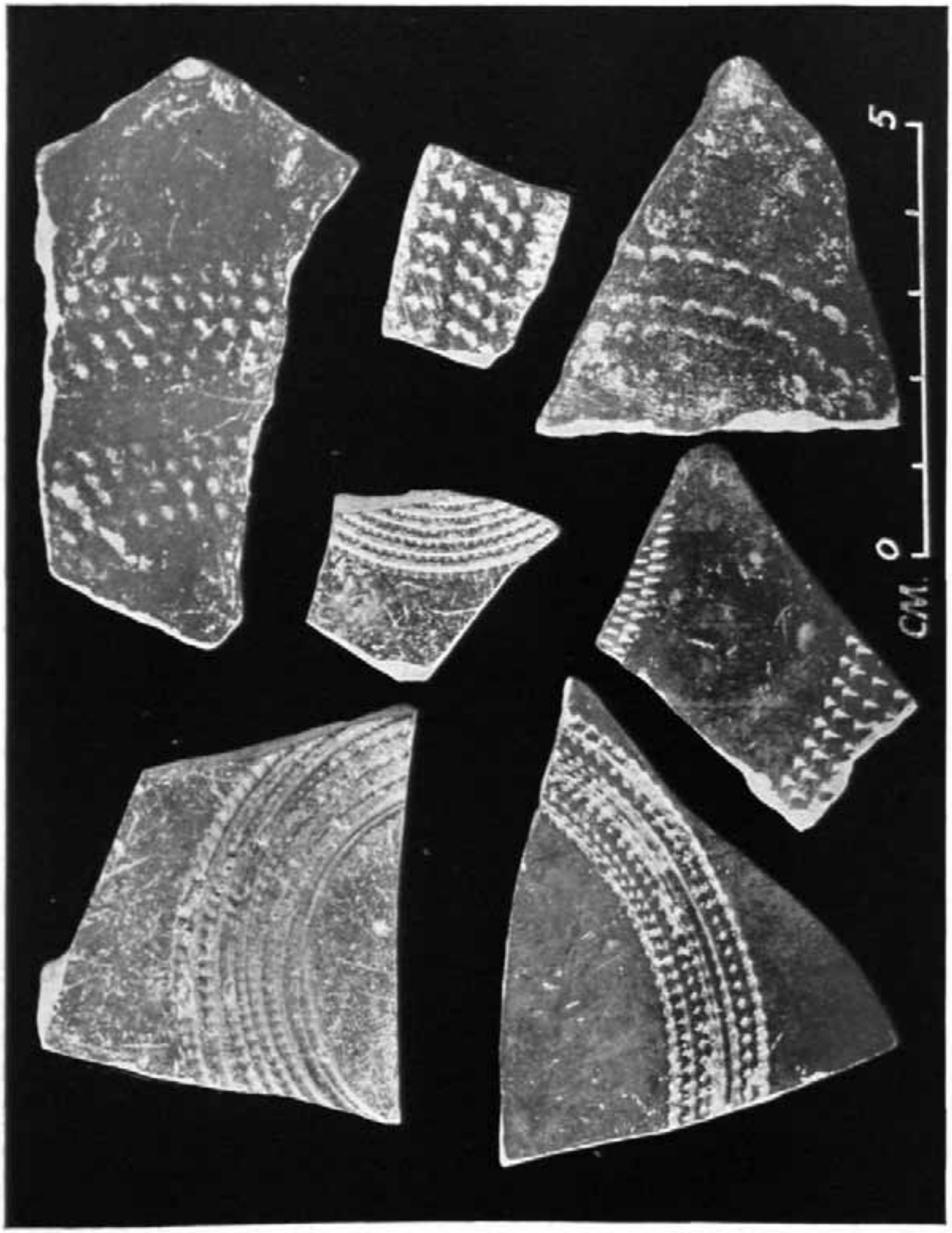


B

A, *Paiyampalli : terracotta objects, Period I;* B. *Kaveripattinam : limestone Buddha-pada. See pp . 22 and 24*



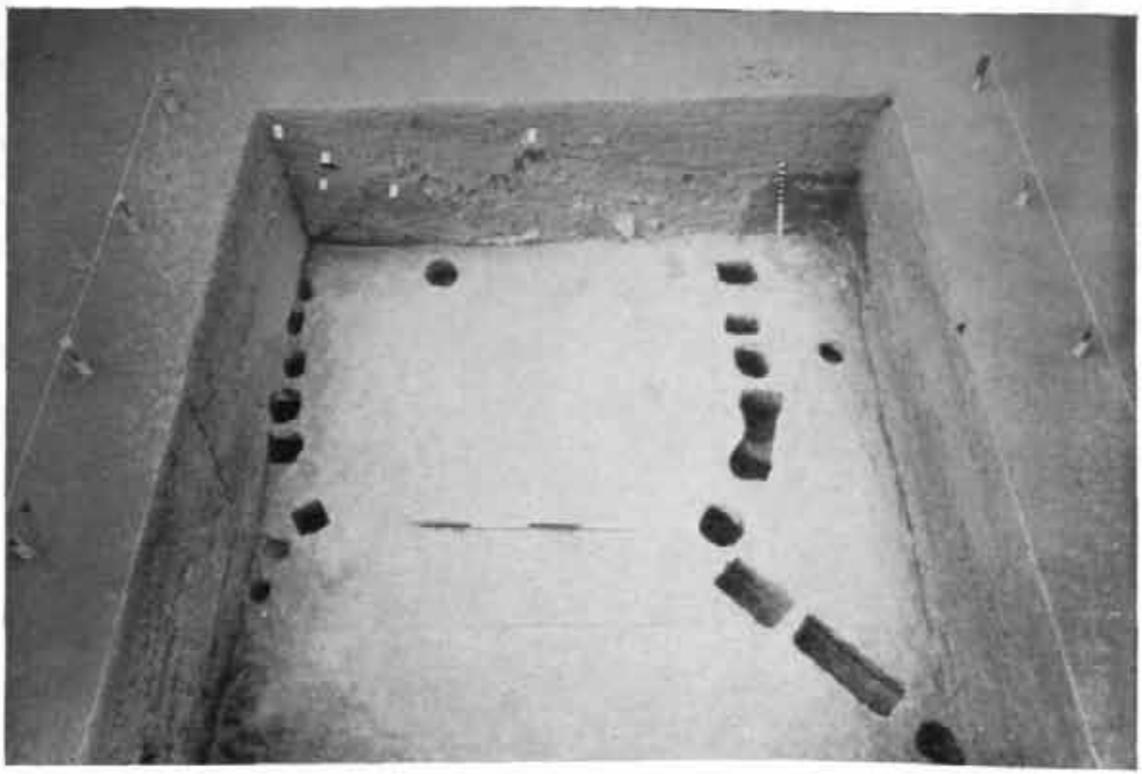
Kaveripattinam : Buddhist vihara. *See p. 24*



Uraiyur : *Rouletted Ware*. *See p.* 25



A

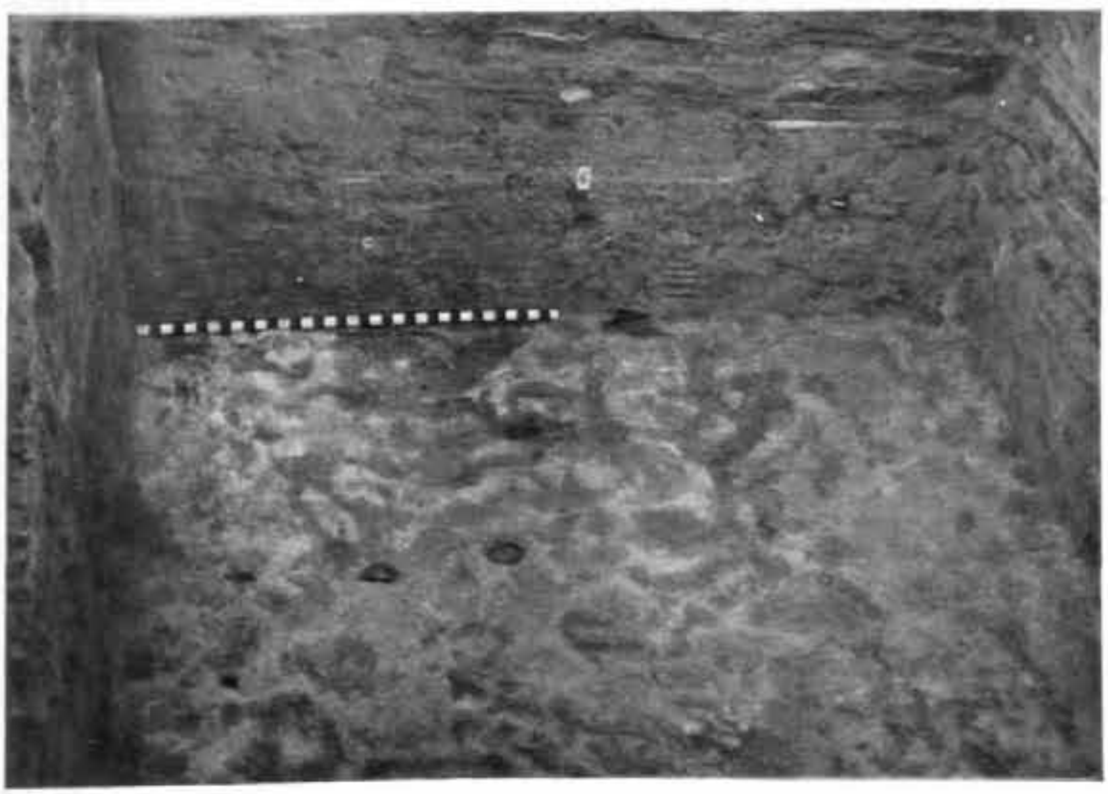


B

Uraiyur : URY-4, A, *brick structure, Period II, and* B, *post-holes, Period III. See pp. 25 and 26.*

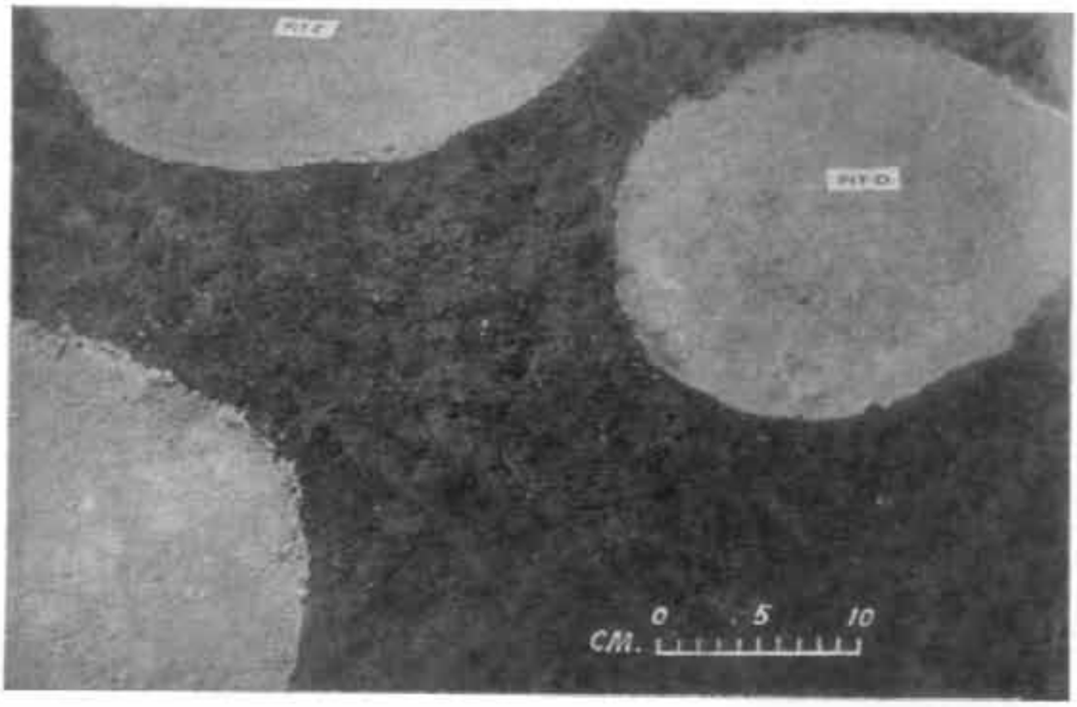


A



B

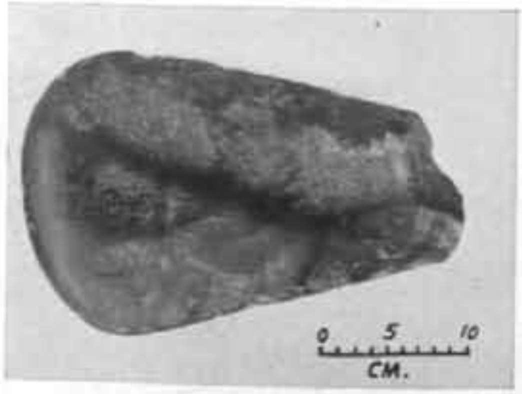
Songaon : A, *general view of the mound;* B, *lime-flooring with post-holes, Sub-period I A.* *See p. 27*



A



B



C

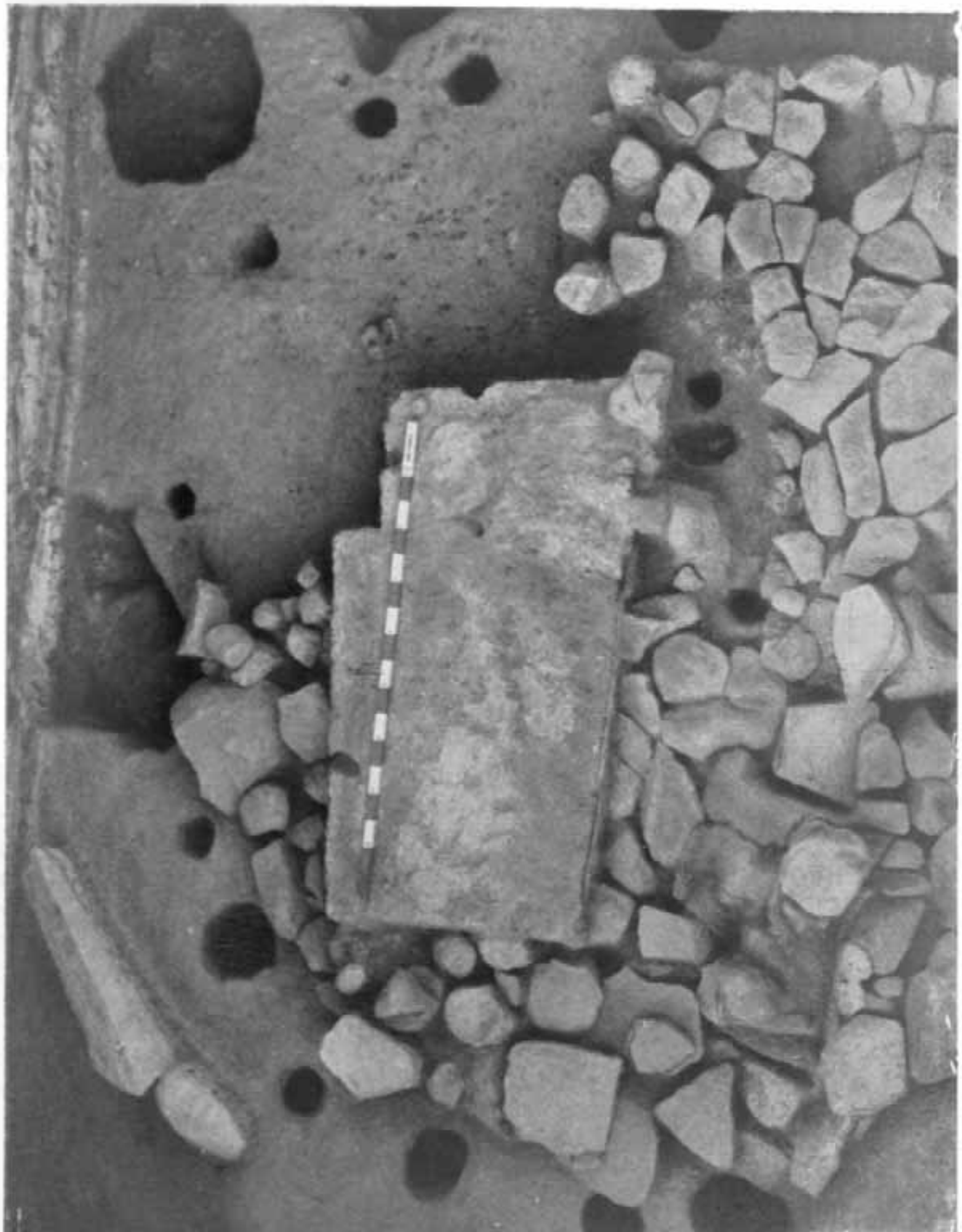


D

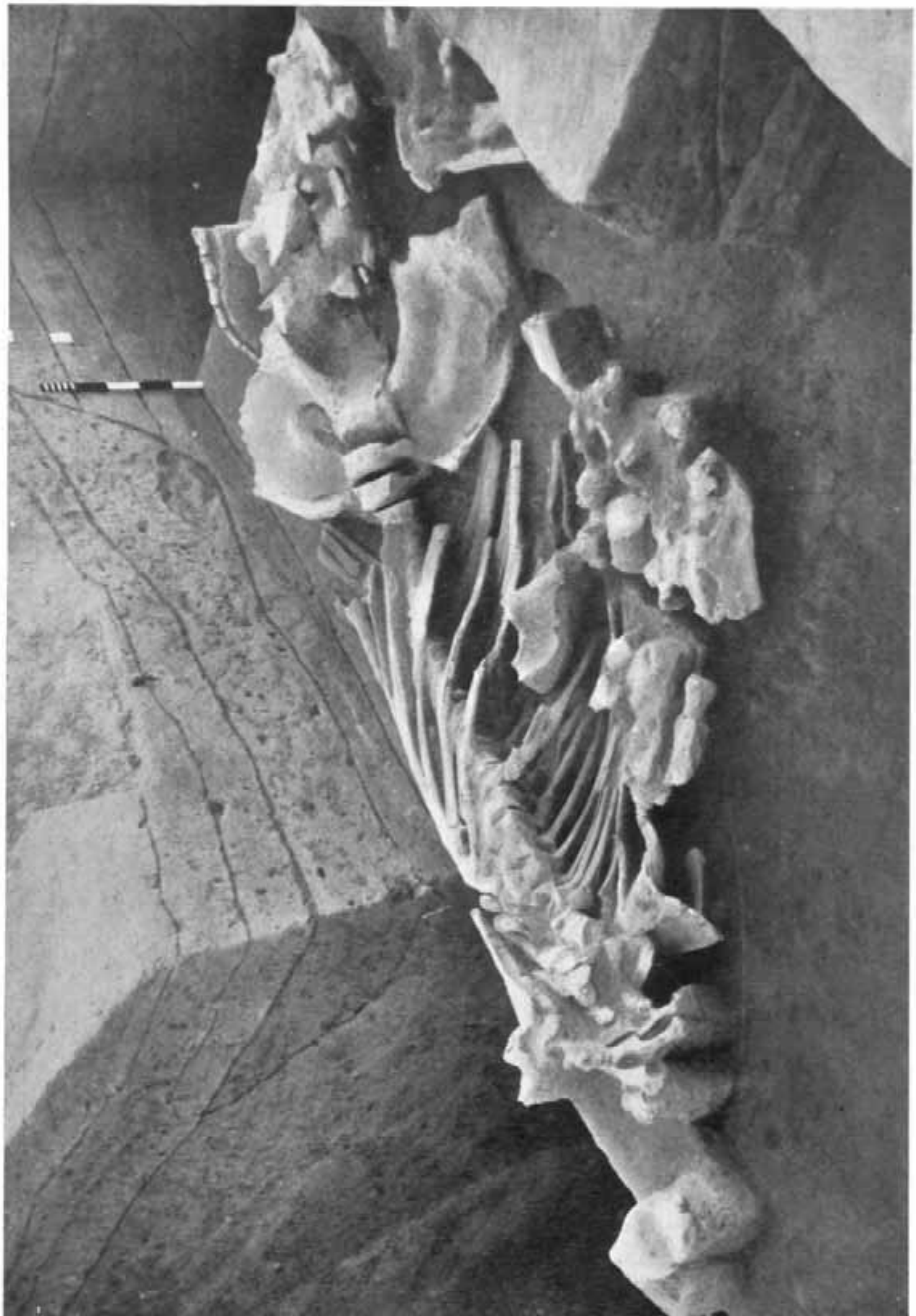


E

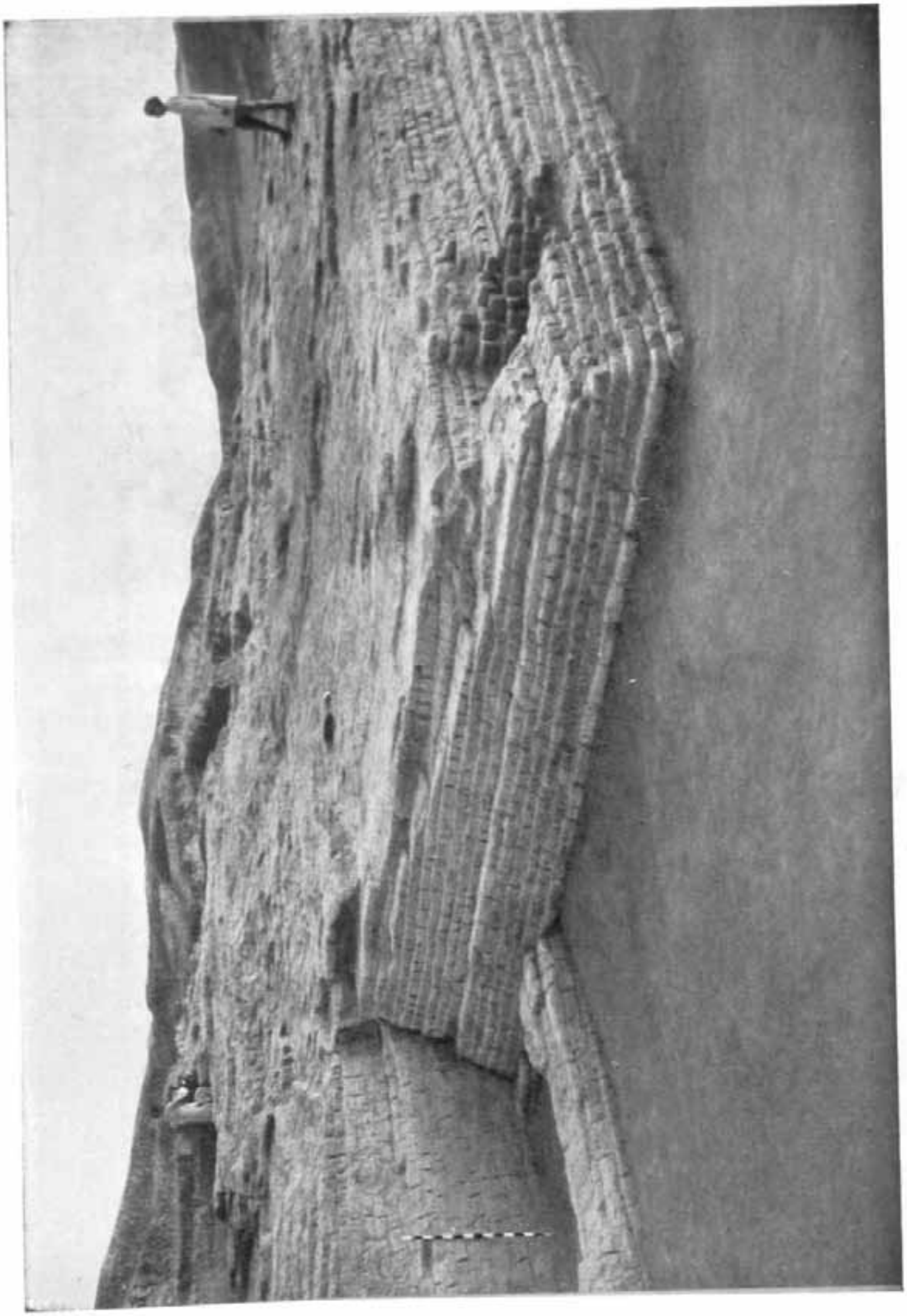
Songaon : A, *circular pits in black soil;* B *and* C, *stone chisel and celt, Sub-period IB.* D, *burnt-clay lumps with bamboo-impressions, and* E, *square bowl-on-stand, Sub-period IC.* *See p. 27*



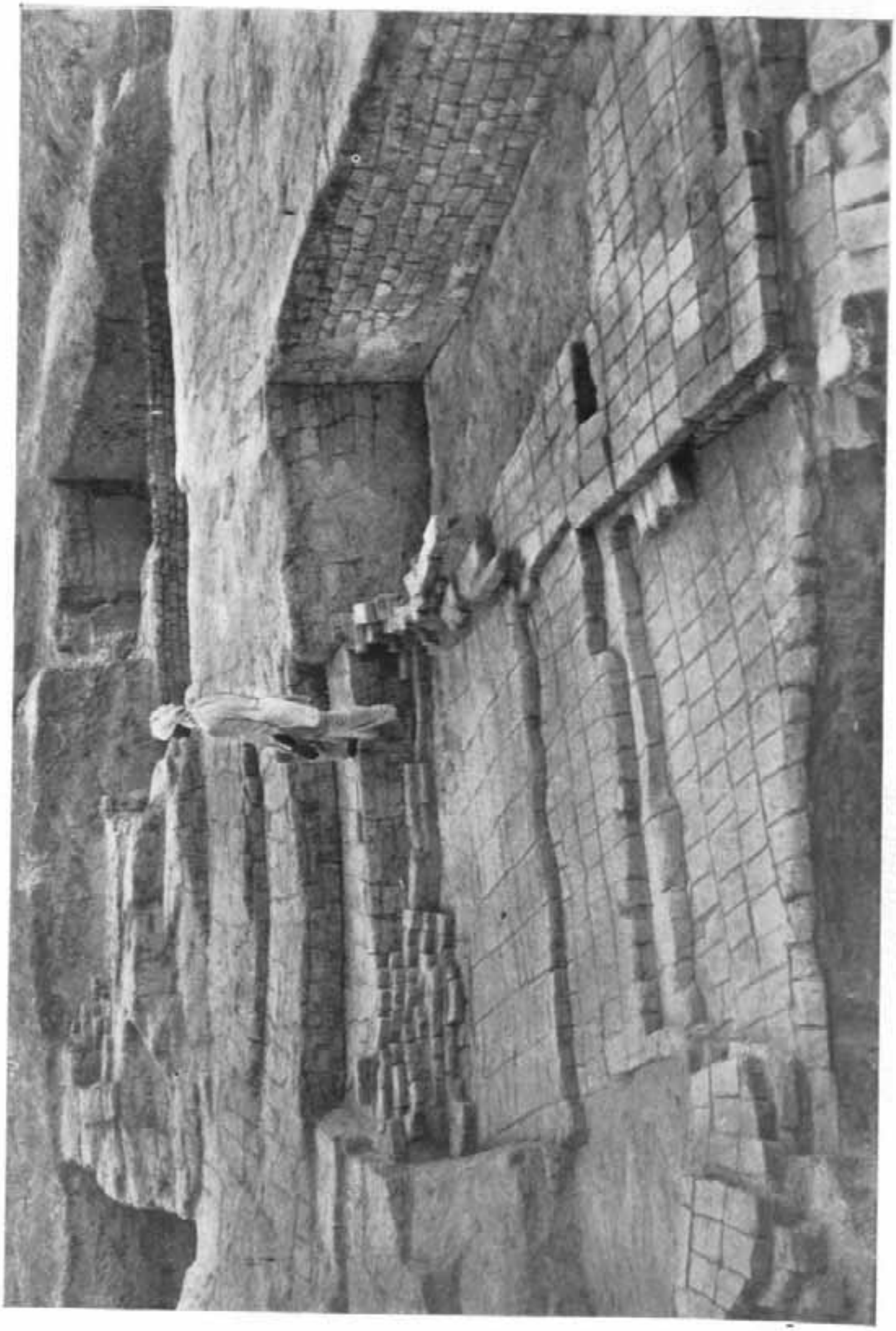
Sanganakallu (Sannarasama hill): circular structure with post-holes. *See p. 30*



Autha : skeletal remains of an elephant. *See p. 33*



Kalibangan: KLB-1, salient on the southern side. *See p. 36*



Kalibangan: KLB-1, gateway on the southern side. See p. 36

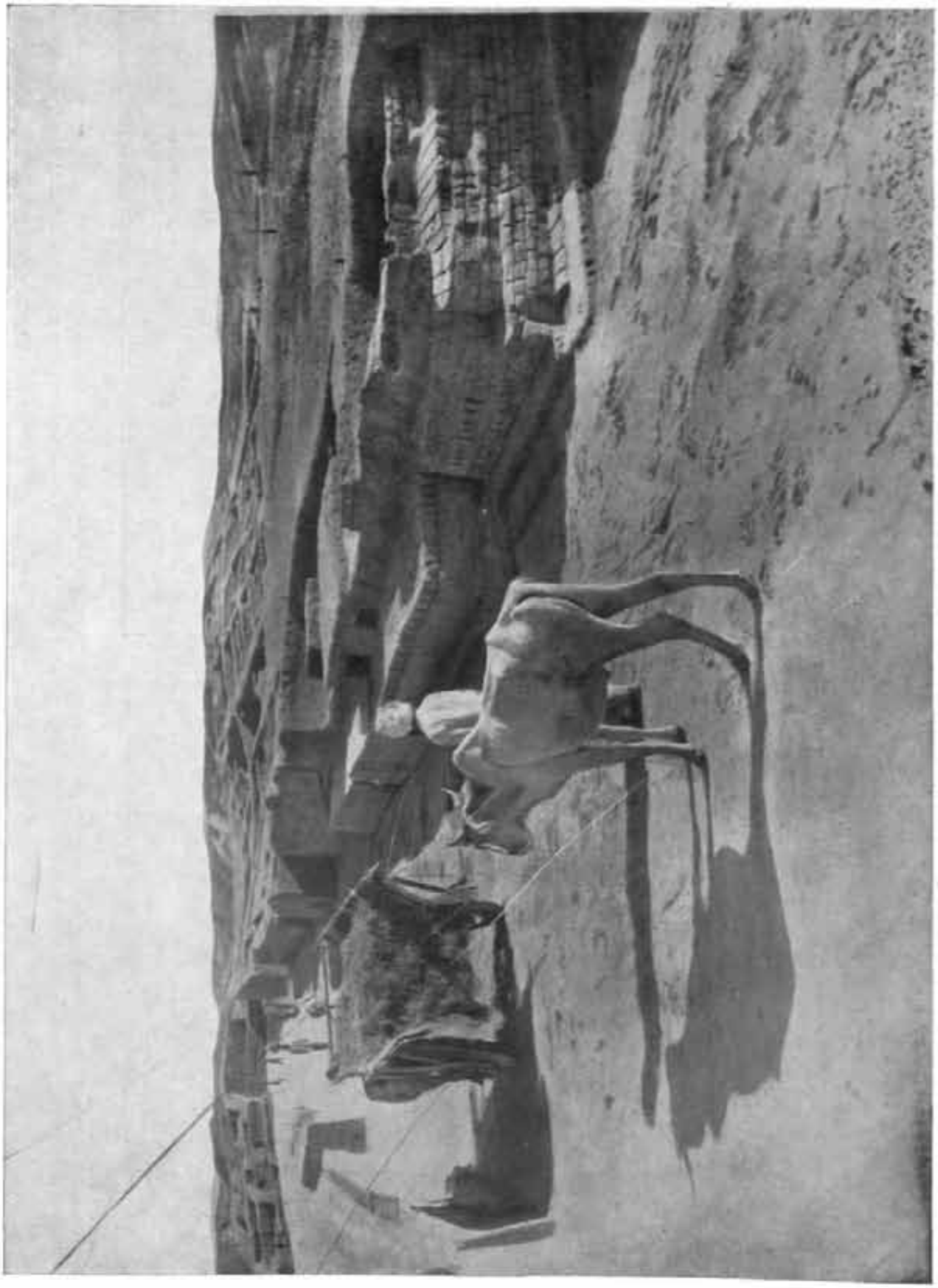


A



B

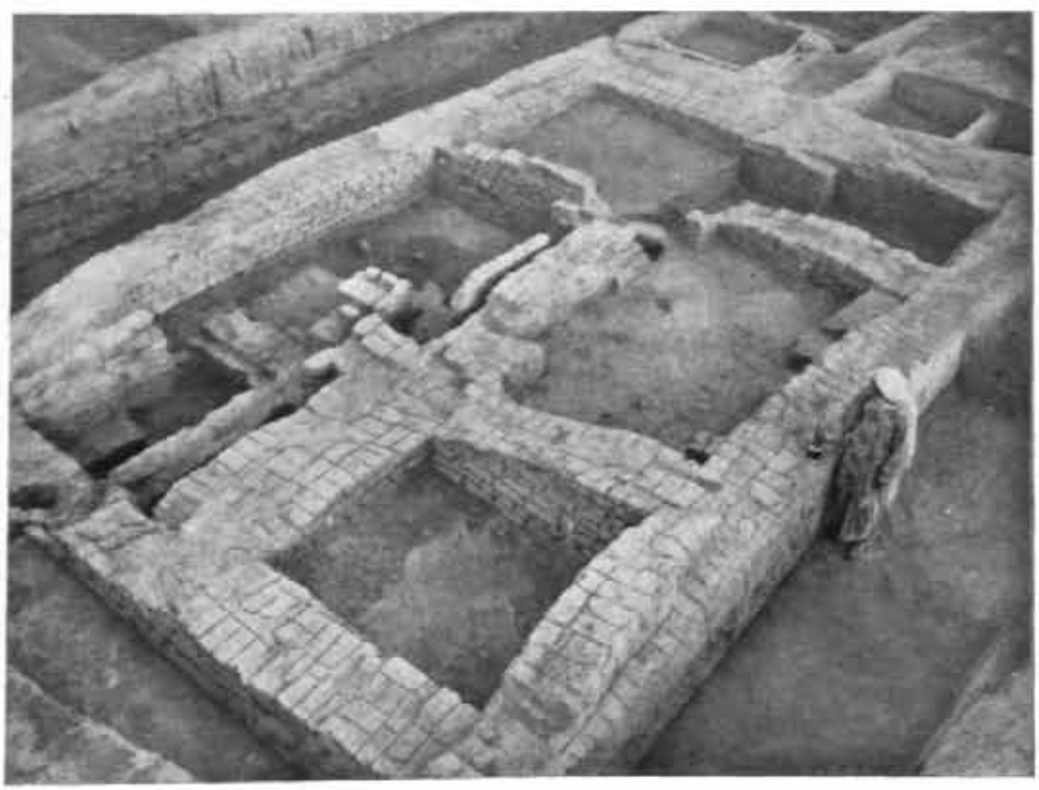
Kalibangan : A, *KLB-1, structure with battered exterior, perhaps part of the north-western corner of the citadel;*
B, *KLB-2, deep digging inside a house showing sequence of structural levels.* *See pp. 36 and 38*



Kalibangan : KLB-2, main thoroughfare. *See p.38*

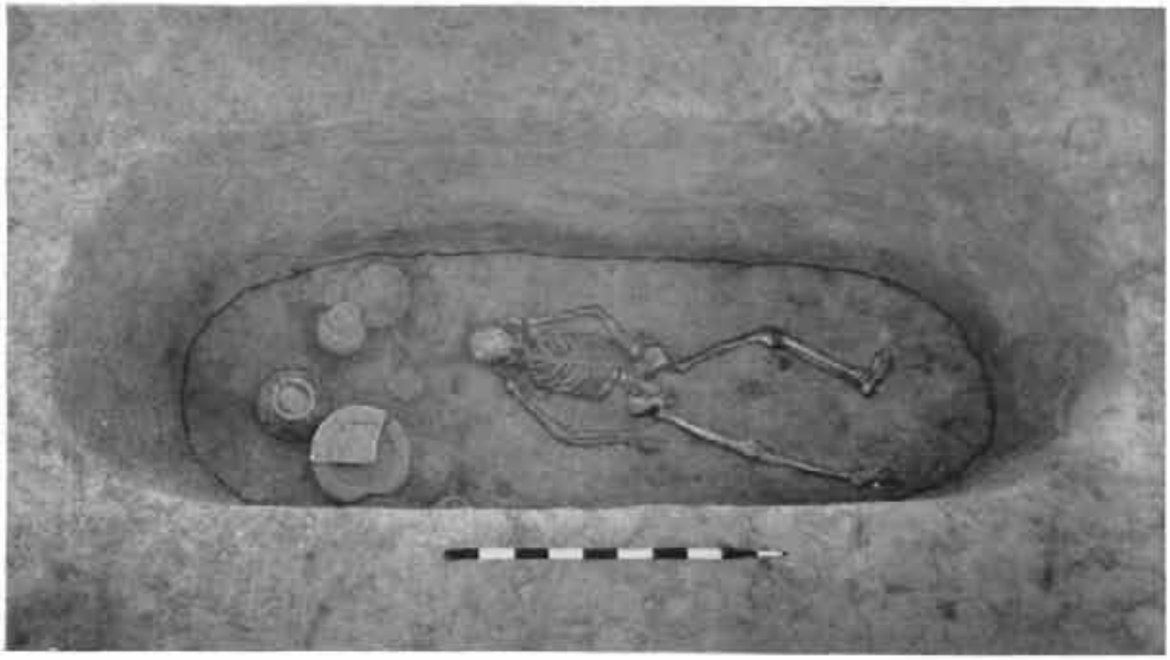


A



B

Kalibangan: KLB-2, blocks of houses, A, *at the junction of two roads, and* B, *facing a smaller street.* *See p. 38*

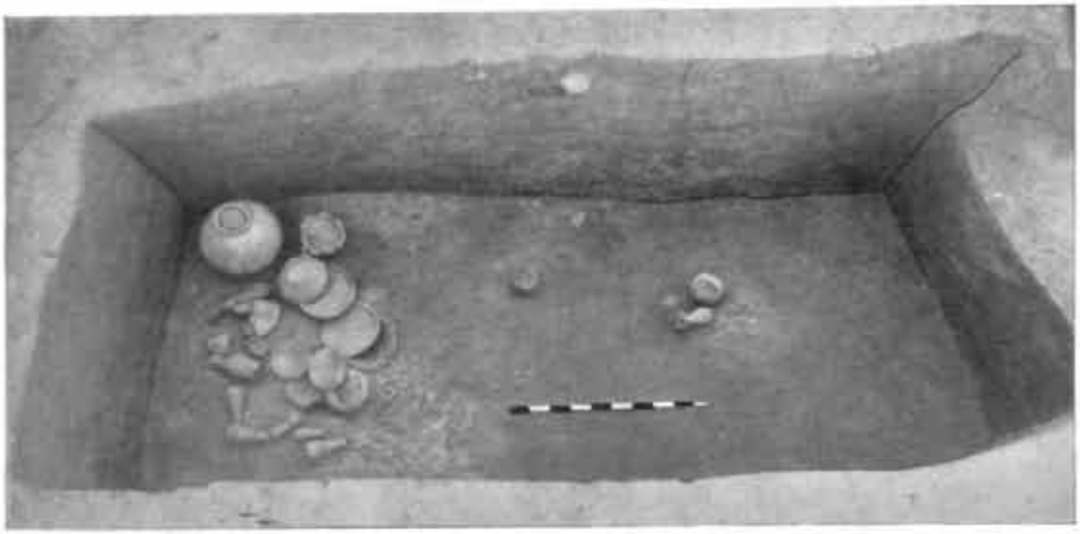


A



B

Kalibangan : graves 26 and 28. See p. 38

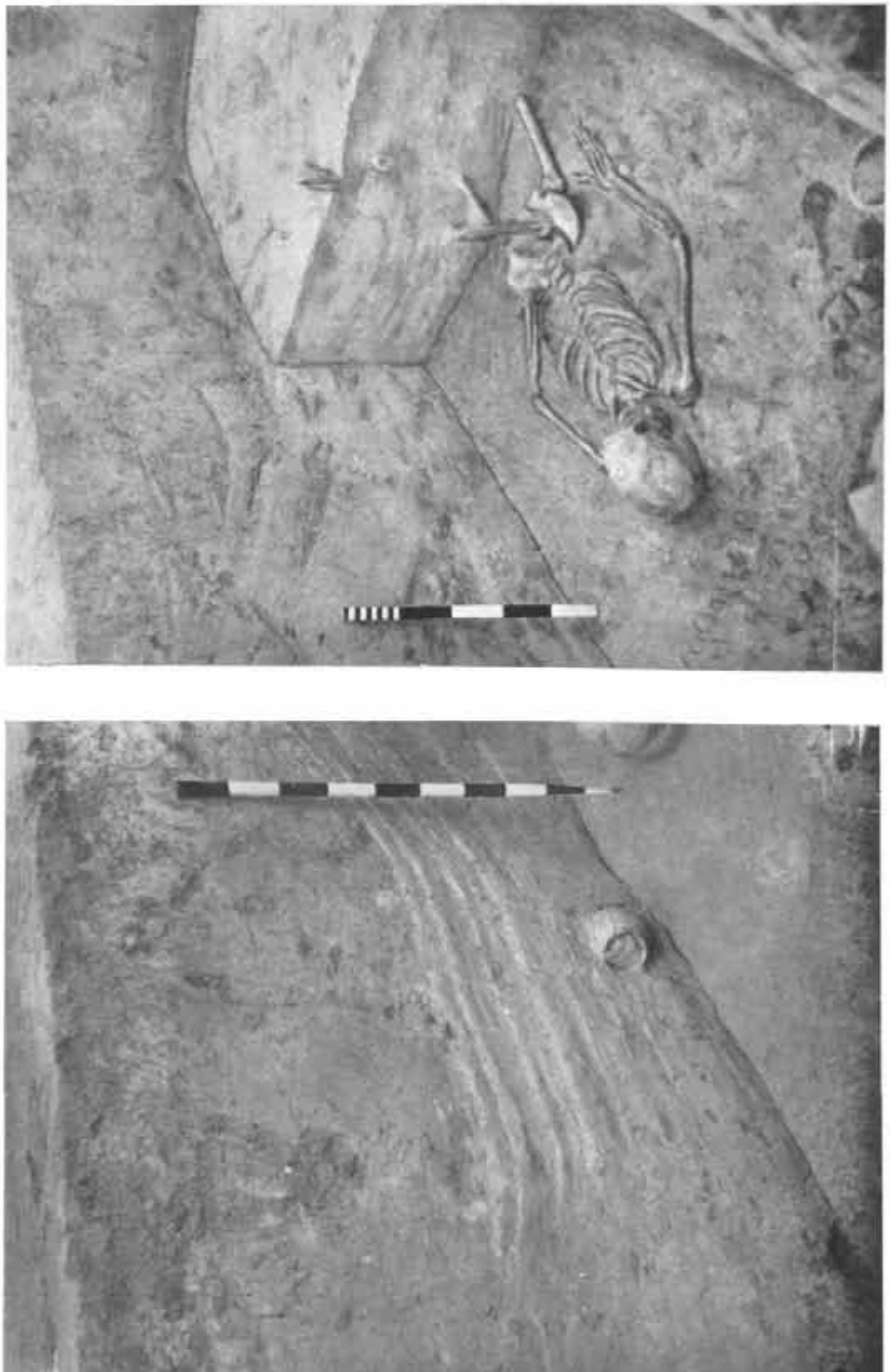


A



B

Kalibangan : A, *grave 22, pit with pottery and steatite disc beads* ; B, *grave 30, part of pit with pottery and bands of fine sand and clay in the filling.* *See p. 39*

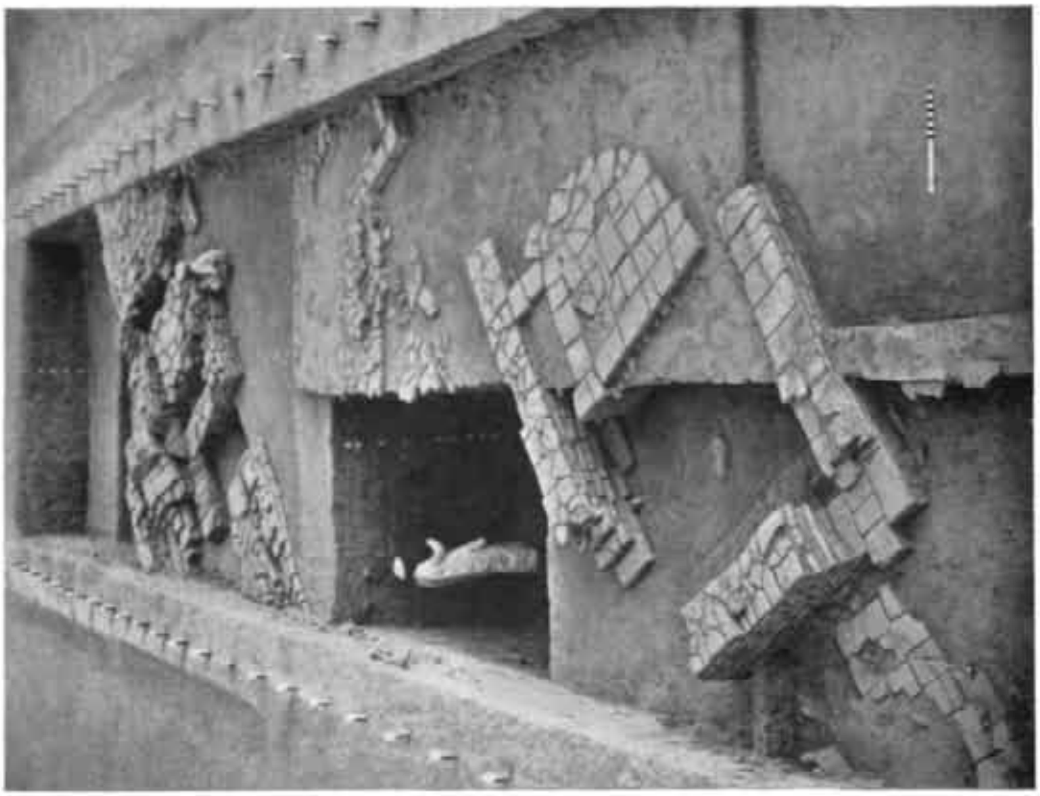


A B

Kalibangan : graves 25 and 26, with bands of fine sand and clay in the filling. *See p. 39*

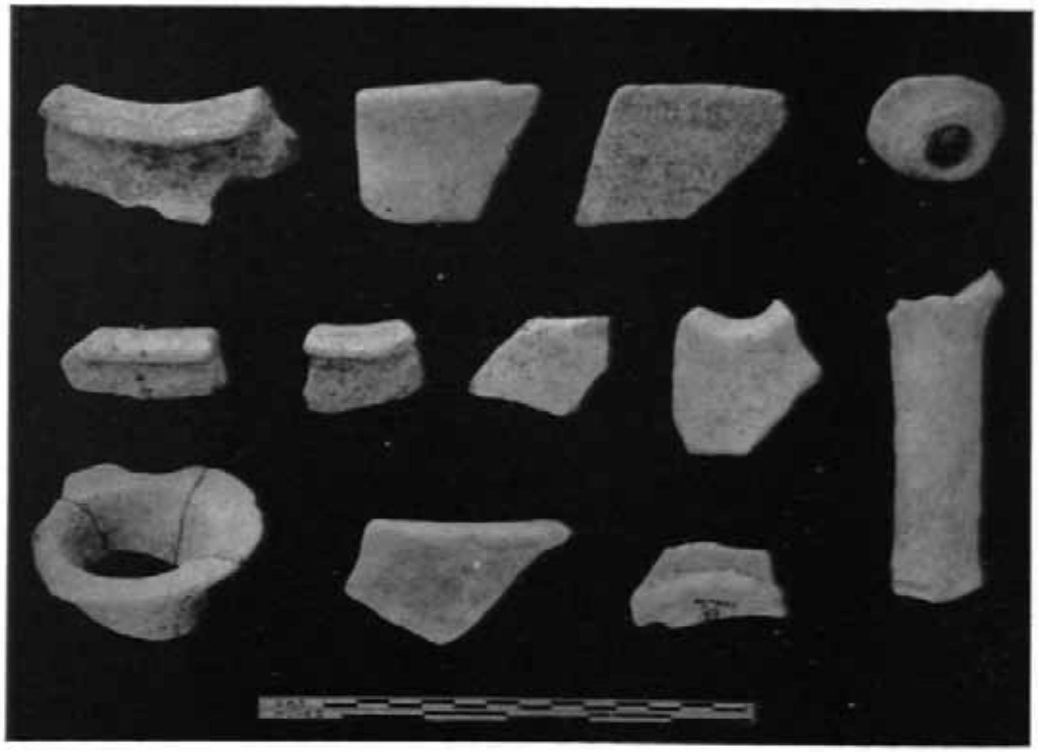


A



B

Ahichchhatra : A, *section showing silty deposits at A, containing sherds of Ochre-coloured Ware, Period I;*
B, *structural remains, Period IV. See pp. 39 and 42*

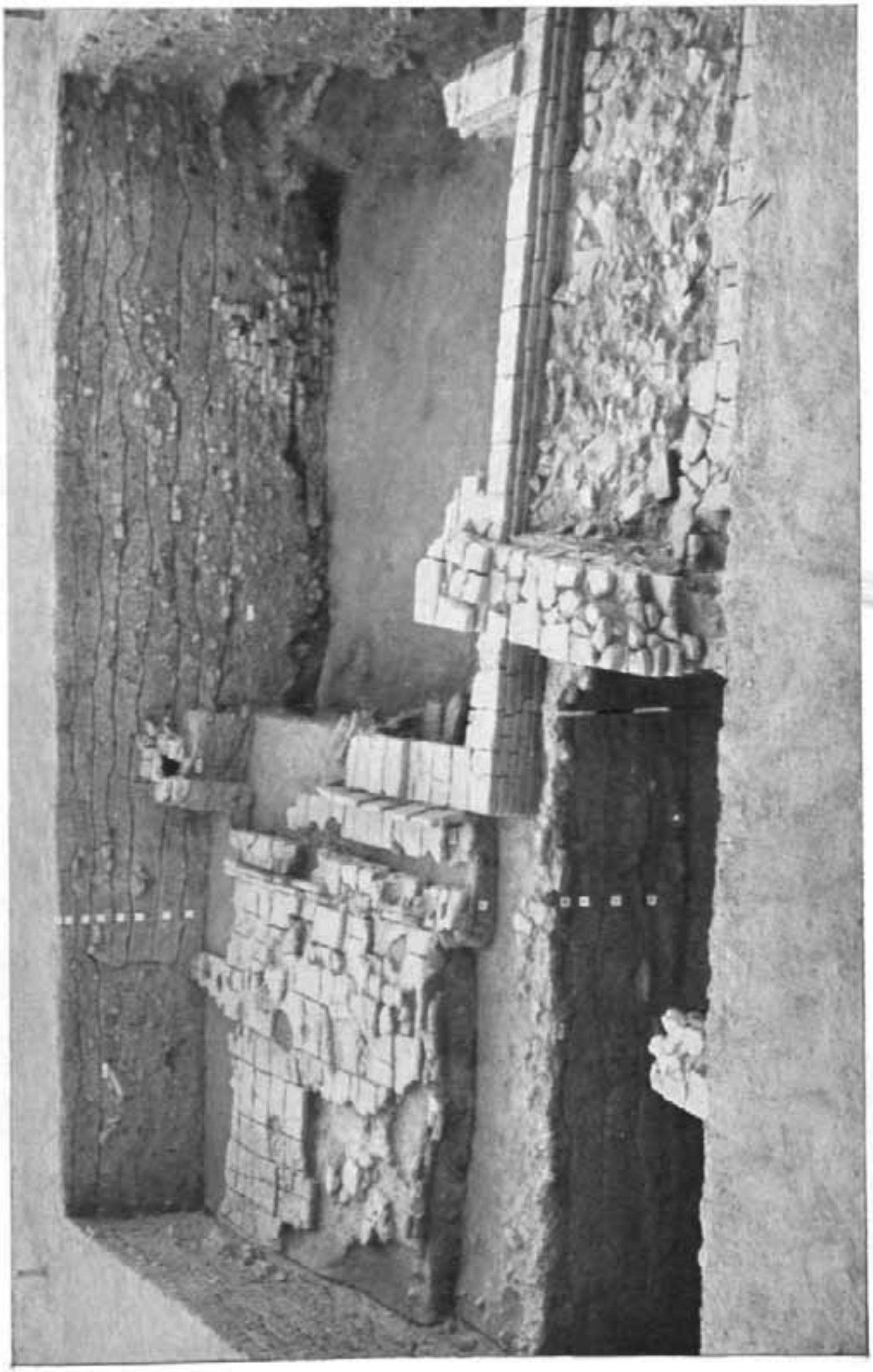


A



B

Ahichchhatra : A, *Ochre-coloured Ware, Period I;* B, *stone block with carved designs, Period IV.*
See p. 42



Masaon : structures, Period III. *See p. 43*



Masaon : terracotta human figurines, 1 and 15, Period I; 2 and 4-8, Period II; 3, 12-14 and 16, Period III; 9-11, Period IV. See p. 43



A



B

Rajghat : A, *painted and incised pottery, Sub-periods IB and IC*; B, *remains of wood embedded in the embankment. See pp. 44 and 45*

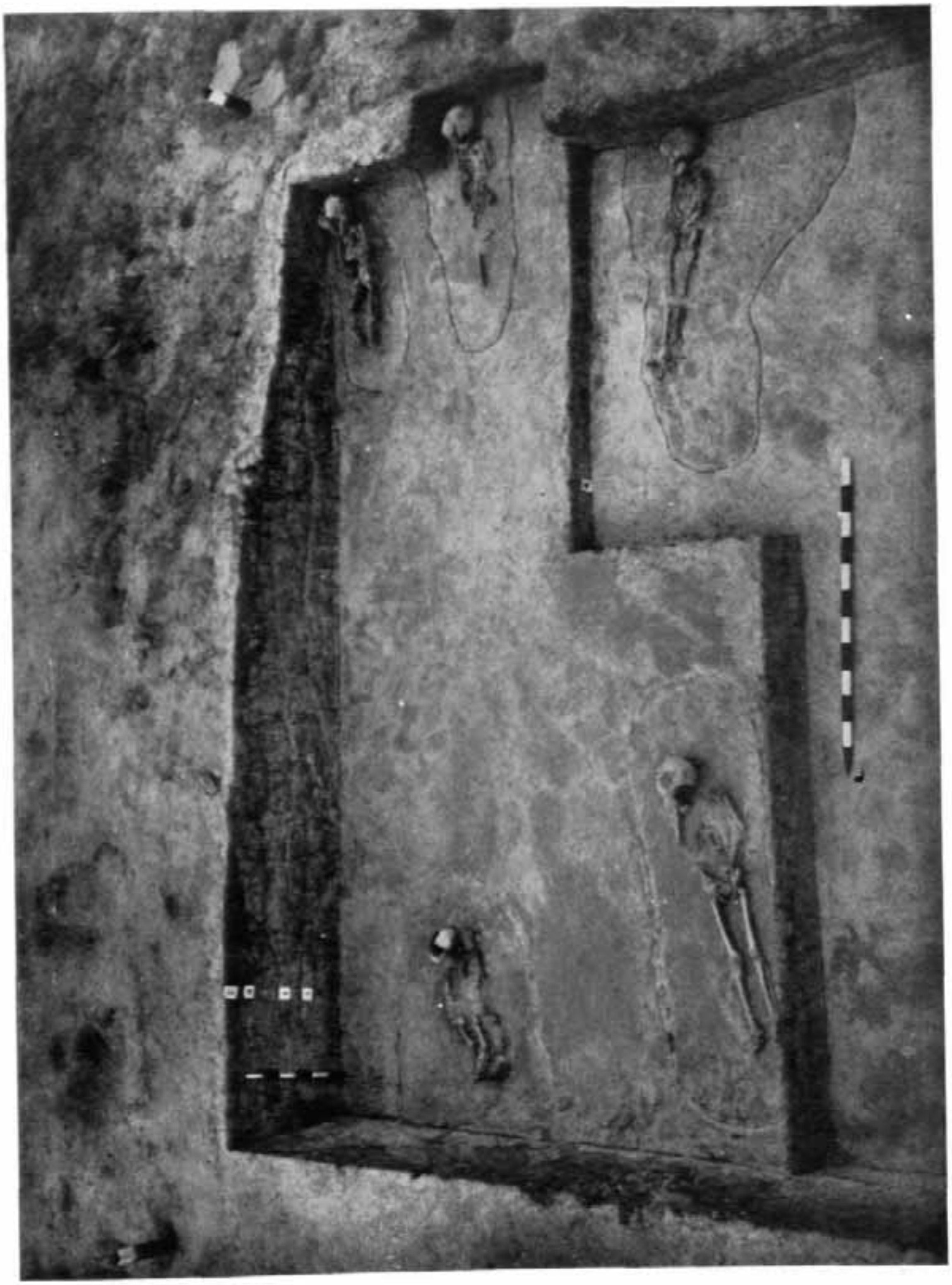


A



B

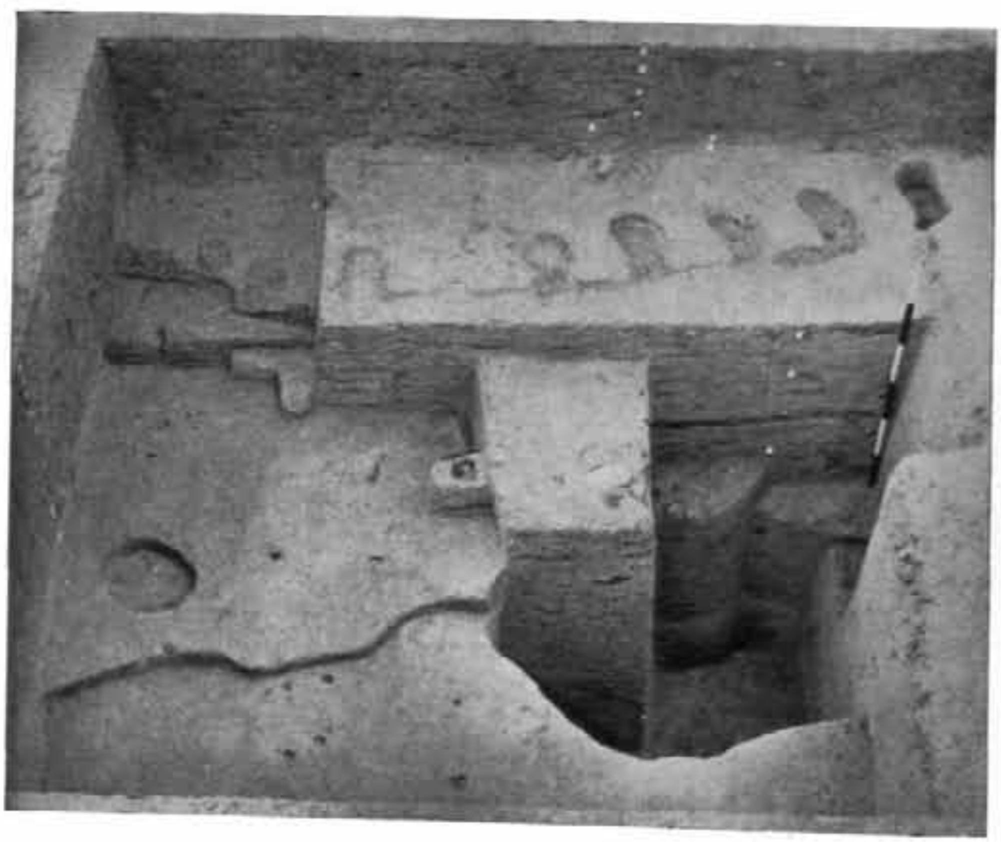
Rajghat : A, *terracotta figurines, Period V;* B, *miscellaneous objects, different Periods.*
See p. 45



Haraipur : extended burials. *See p. 46*

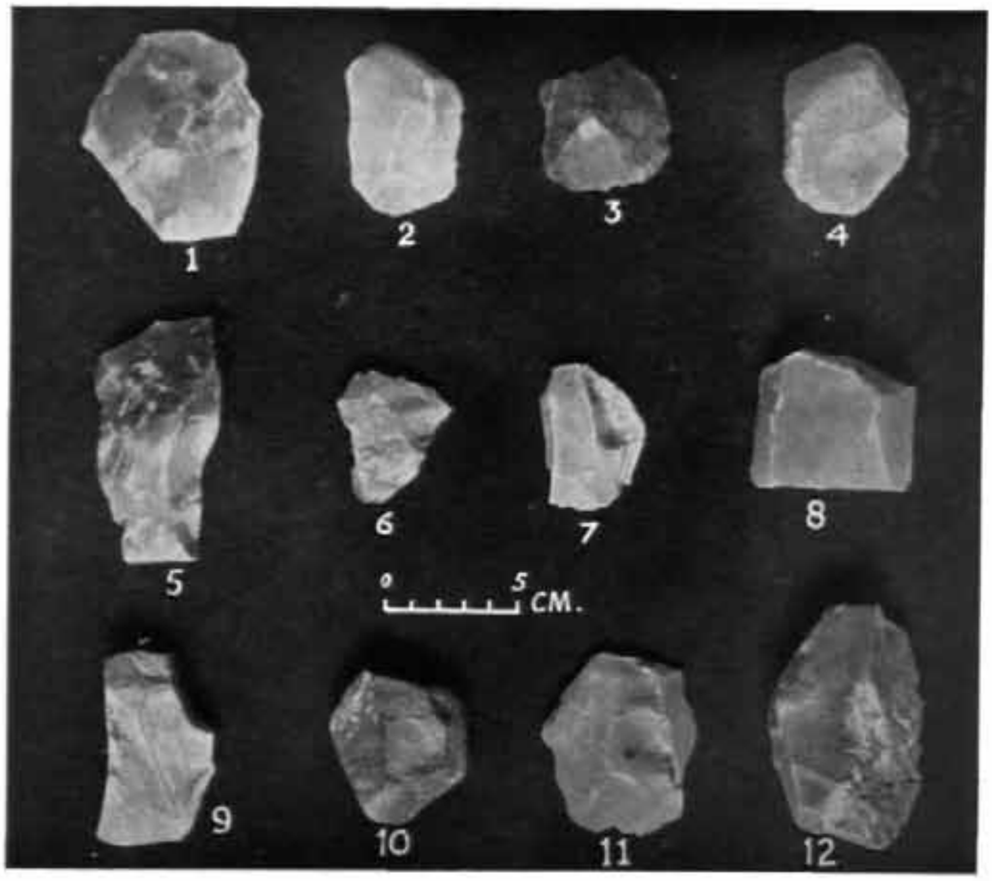


A



B

Pandu-rajar-dhibi; A, headless skeleton, Period I: B, row of ovens, Period III. See pp. 46 and 47



A



B



C

Pundu-rajar-dhibi : A, *microliths, 10 and 12, Period II; 1-3, 5, 6, 9 and 11, Period III, and 4, 7 and 8, Period IV*; B, *copper spear-head (15·5 cm.)* and C, *bone tools, (23, 31·5 and 25 cm.) Period III.*
See pp. 47 and 48



A



B



C



D

Pandu-rajar-dhibi : pottery, A, *knobbed-lid or saucer, Period II;* B, *bowl of black-and-red ware, Period II;* C, *vase of red ware with graffiti, Period III;* D, *vase of red ware, painted in black, Period III.* *See pp. 47 and 48*



A



B

Rajbadidanga : A, *panchayatana temple-complex;* B, *mandapa, walls and platform of the temple.*
See p. 49

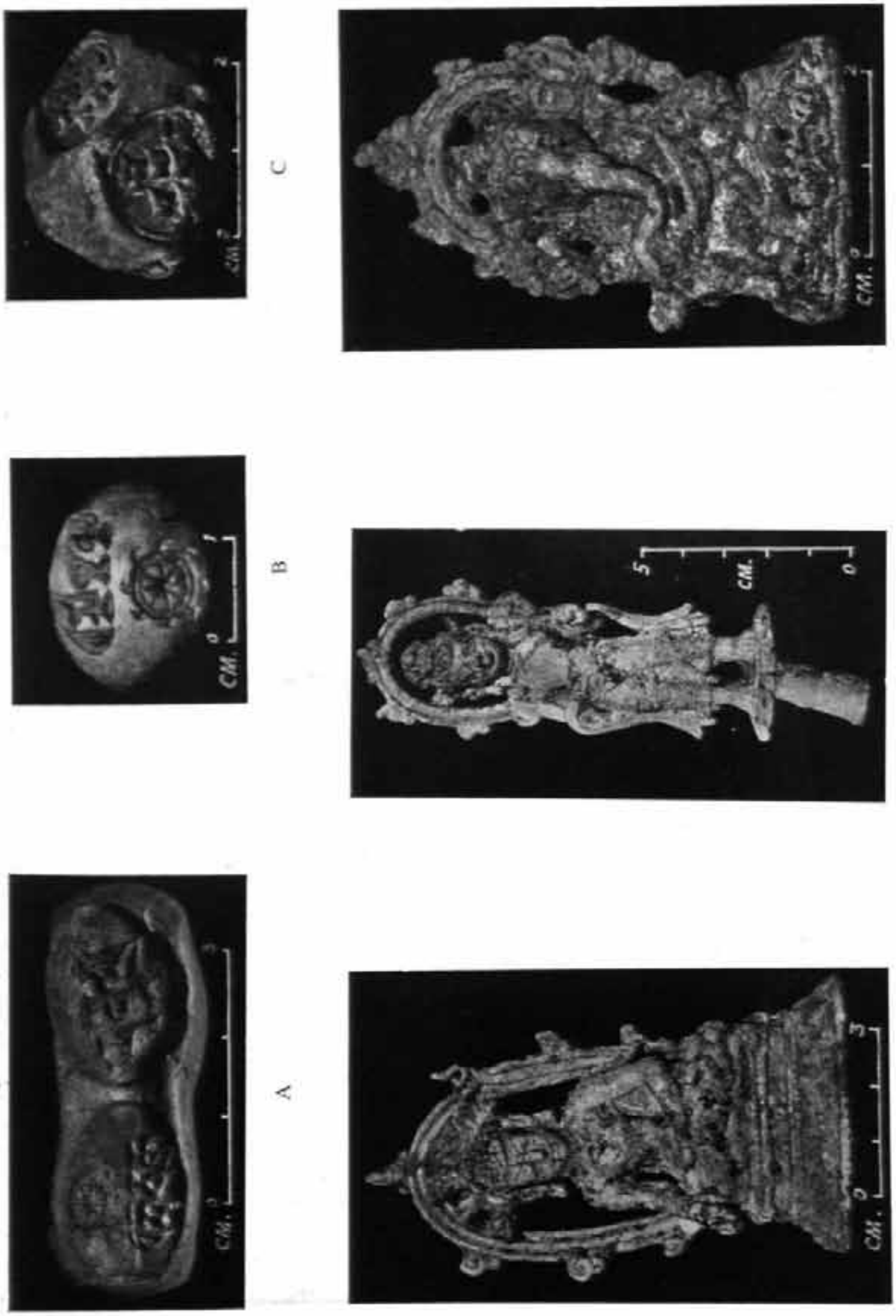


A



B

Rajbadidanga : A, southern compound-wall of the temple with niches and plinth-offsets; B, eastern compound-wall of the temple showing projections and offsets in the wall and earlier brick platform and *surkhi*-floors. See p. 49



A B C

D E F

Rajbadidanga : A *and* B, *terracotta sealings, and* C, *stone seal;* D-F, *bronze images.* *See p. 50*



A



B

Chandraketugarh : A, *Khana-Mihirer-Dhipi, main temple showing earliest working-levels;* B, *kunda with foundation-tablet carved with lotus.* *See p. 52*



A





B C

Chandraketugarh : A, *Khana-Mihirer-Dhipi, furnaces and troughs for burning shells;* B, *Itakhola, terracotta plaque* ; C, *Khana-Mihirer-Dhipi, stone plaque of Vishnu.* *See p. 52*



Puratattva Sangrahalaya, Jabalpur : Brahmi inscription. *See p. 56*



B

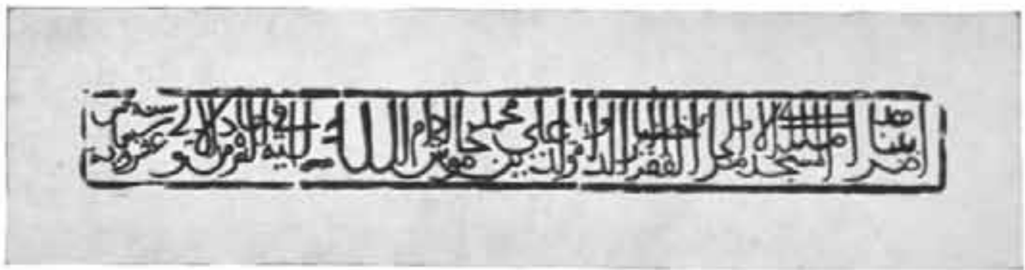


A

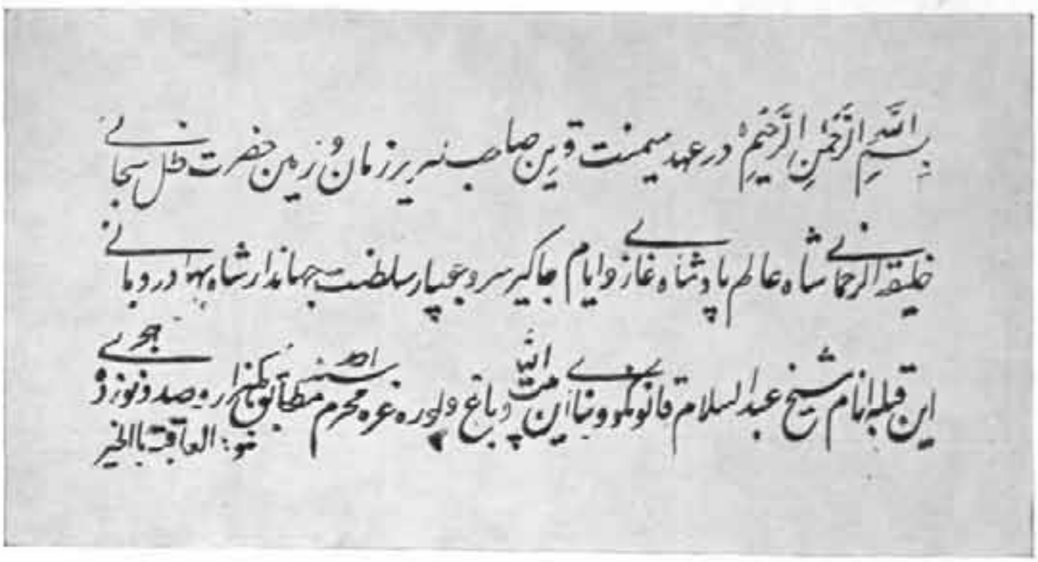
A, *Kiranur : Chera inscription;* B, *Pauni (Central Museum, Nagpur) : Brahmi inscription.* *See pp. 57 and 58*



A



B



C

Vijapur : A, *inscription of Firuz Shah Tughluq;* B, *Patan; inscription of Maliku'l-Umara 'Ali;* C, *Dewas : inscription of Shah 'Alam I.* *See pp.64,65 and 66*



A



B



C



D

Vidisha : A *and* C, *yaksha, and* B, *lotus-capital;* D, *Sarnath : female figure.* *See pp. 74 and 77*



A

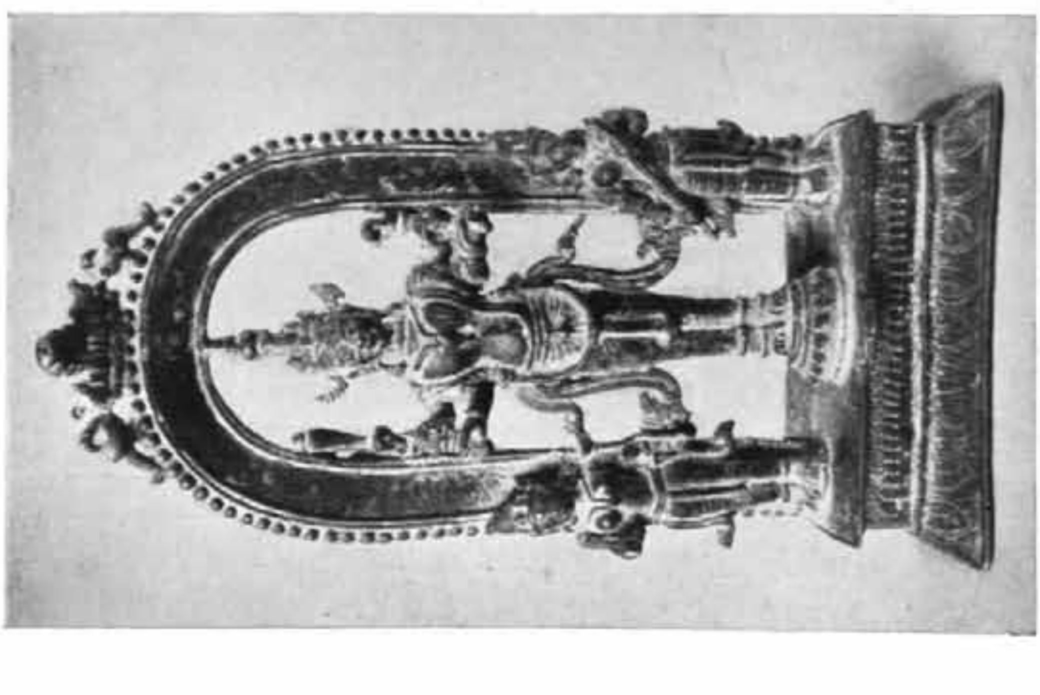


B

A, *Velore, Vishnu;* B, *Niyamu, Varaha.* *See pp. 75 and 76*



B



A

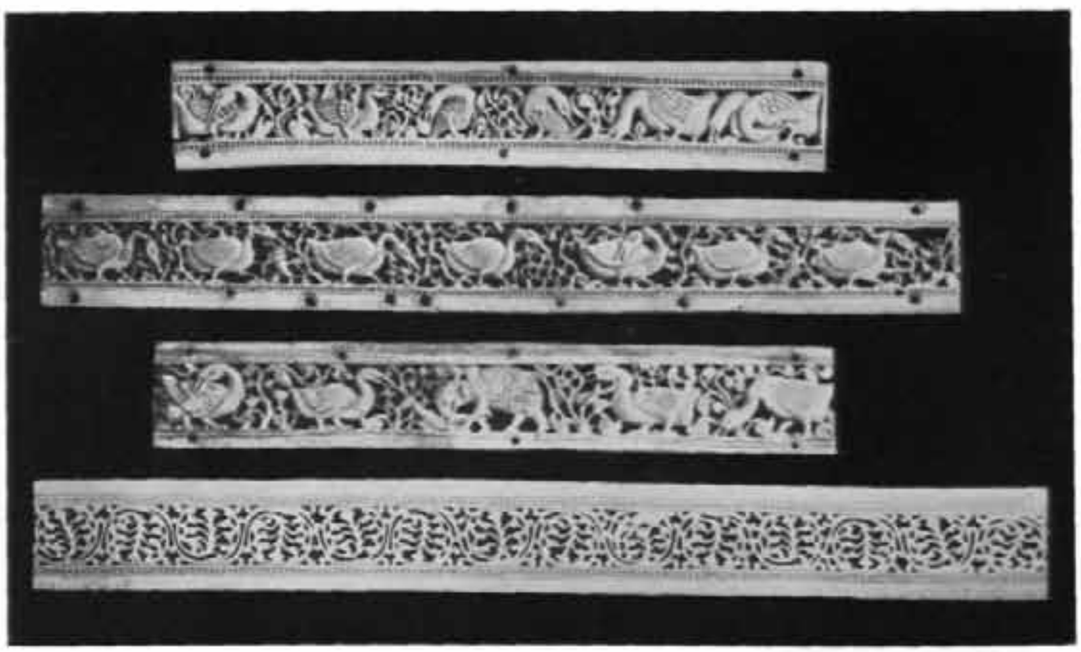
Prince of Wales Museum, Bombay : A, *bronze, Vishnu (ht. 19·8 cm.) Pala Period;* B, *Mahishamardini, Orissa (ht. 19cm.)* *See p. 79*



A

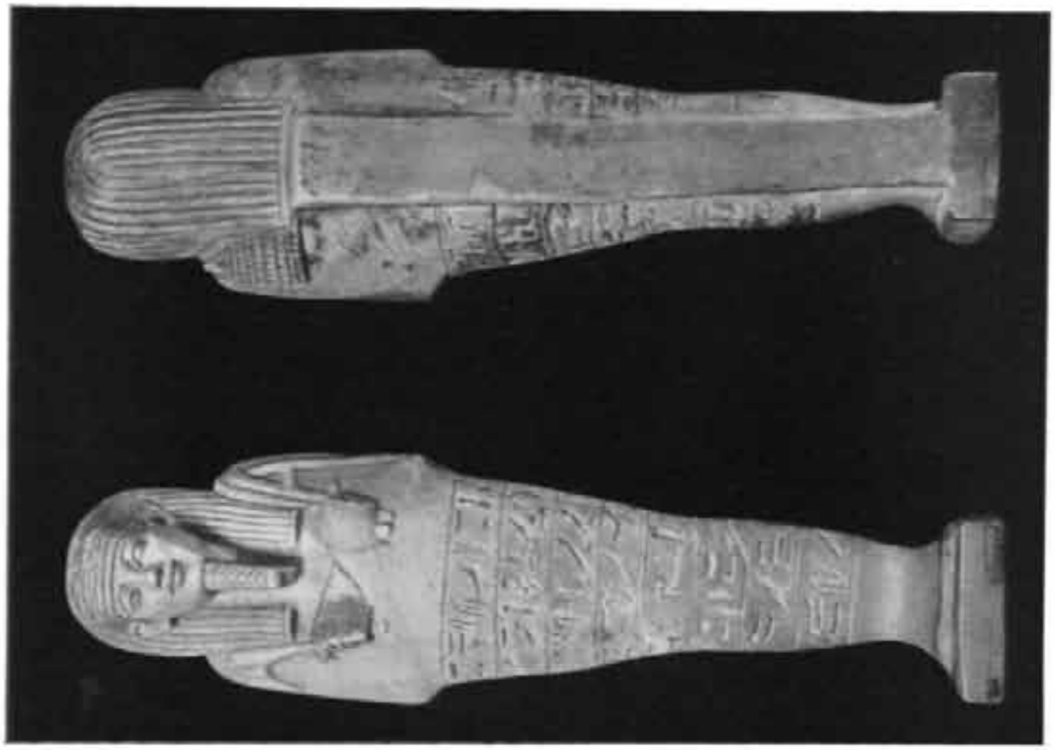


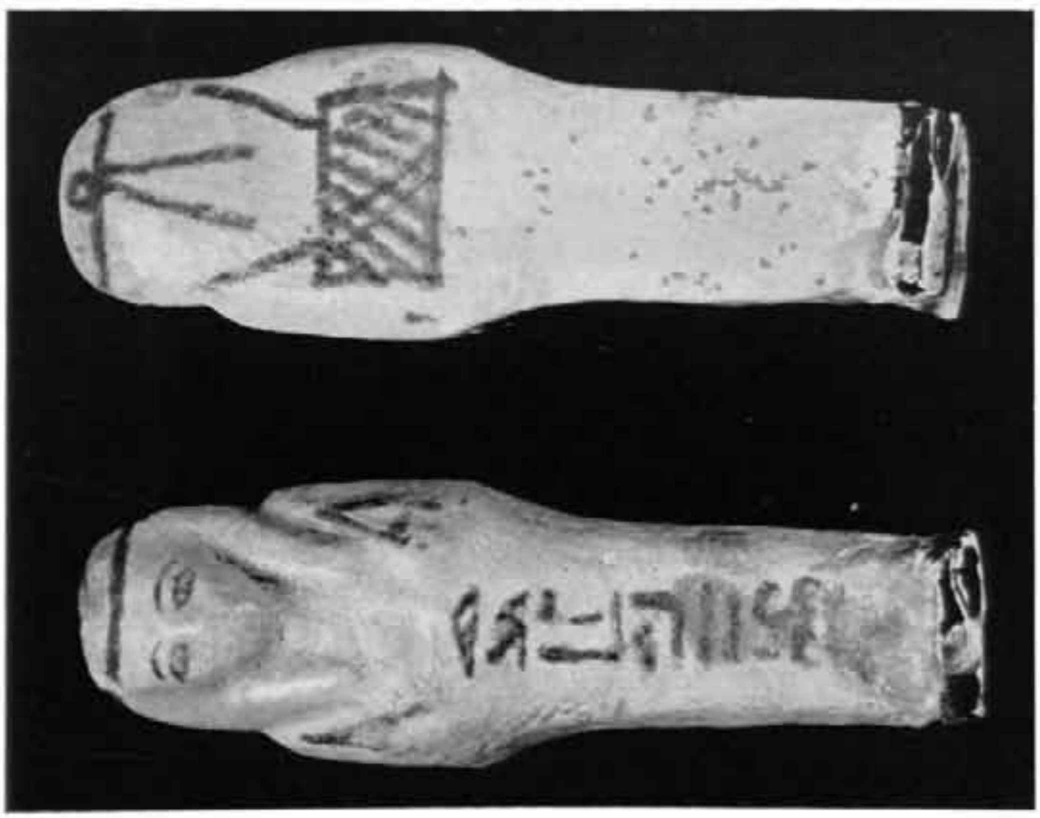
B



C

Asutosh Museum, Calcutta : A, *terracotta* (*ht. 9 cm.*), *Chandraketugarh;*
B, *Gilt Siamese Buddha-head* (*ht.* 13 *cm.*); C, *ivory fillets*
(*length 21, 29, 21, and 32 cm. respectively from top to bottom*), *Orissa*. *See p. 80*





A B

Indian Museum, Calcutta : Ushabti figurines of blue faience. *See p. 80*



Indian Museum, Calcutta : Bronze Gallery. *See p. 81*



A



B



C

A, *Indian Museum, Calcutta : Vishnu, Sunderbans;* B, *Archaeological Museum, Mathura: railing-pillar with yakshi;* C, *Archaeological Museum, Mathura: Varaha. See pp. 80 and 82*



A



B

Goa Velha : Sé Cathedral, A, before, and B, after repairs. *See p. 95*

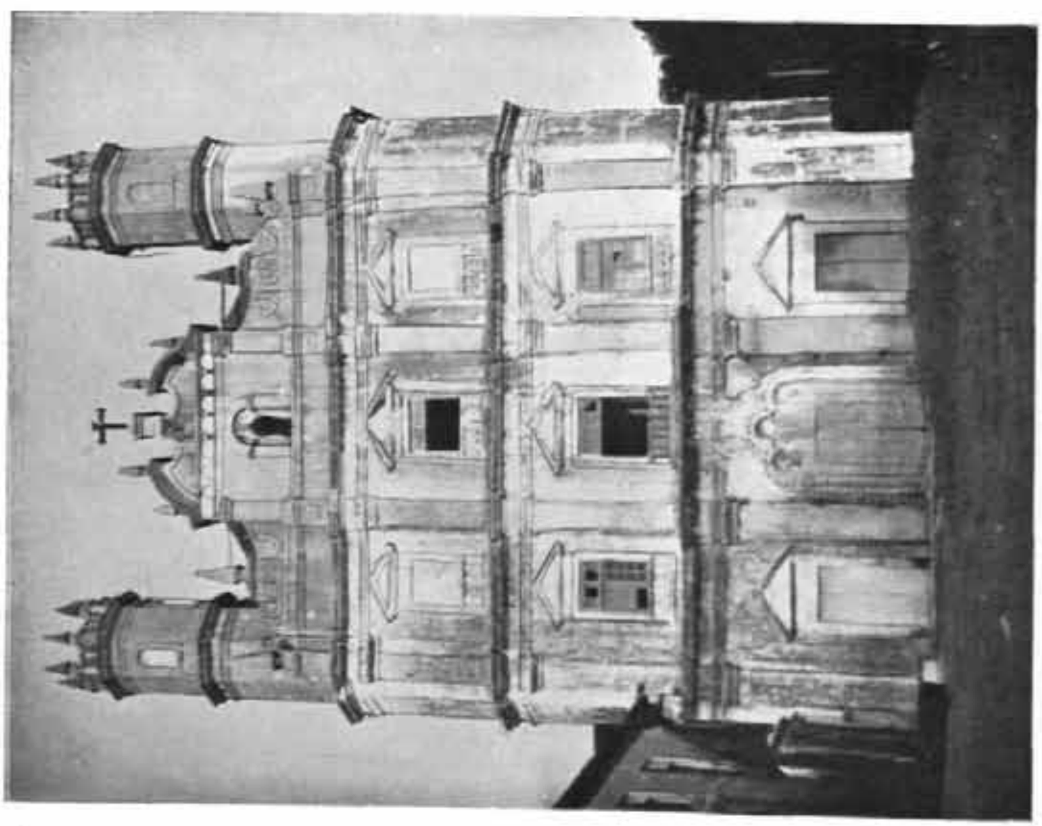


A

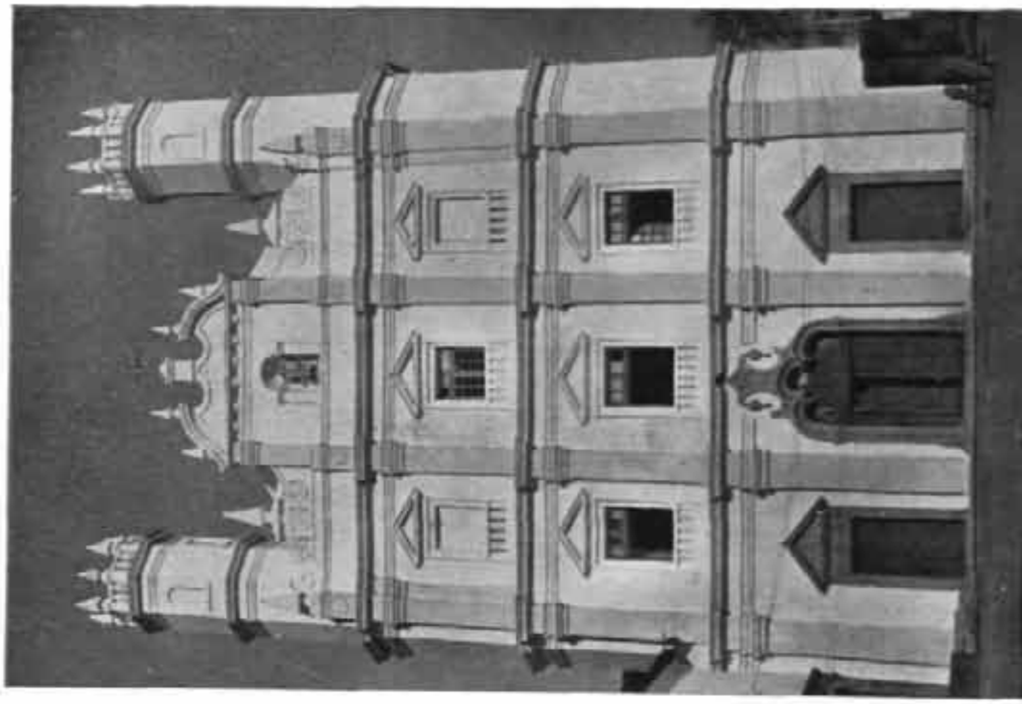


B

Goa Velha : Sé Cathedral, roof, A, *before, and* B, *after repairs.* *See p. 96*



A



B

Goa Velha : *Church of St. Francis of Assisi,* A, *before, and* B, *after repairs.* *See p.* 96

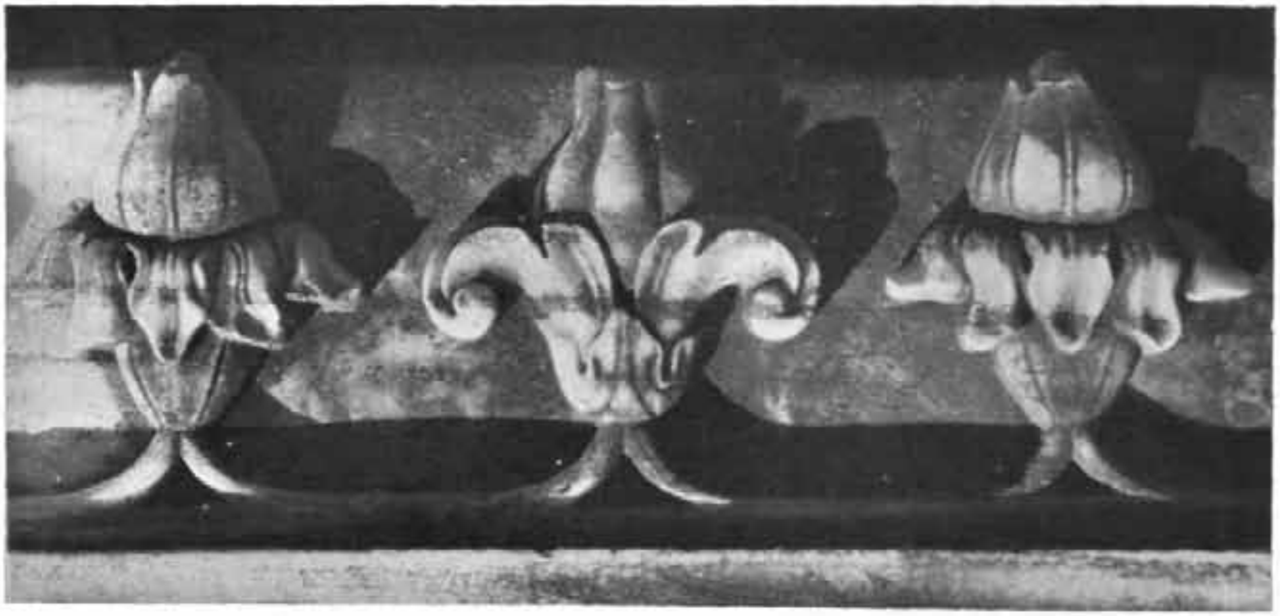


A

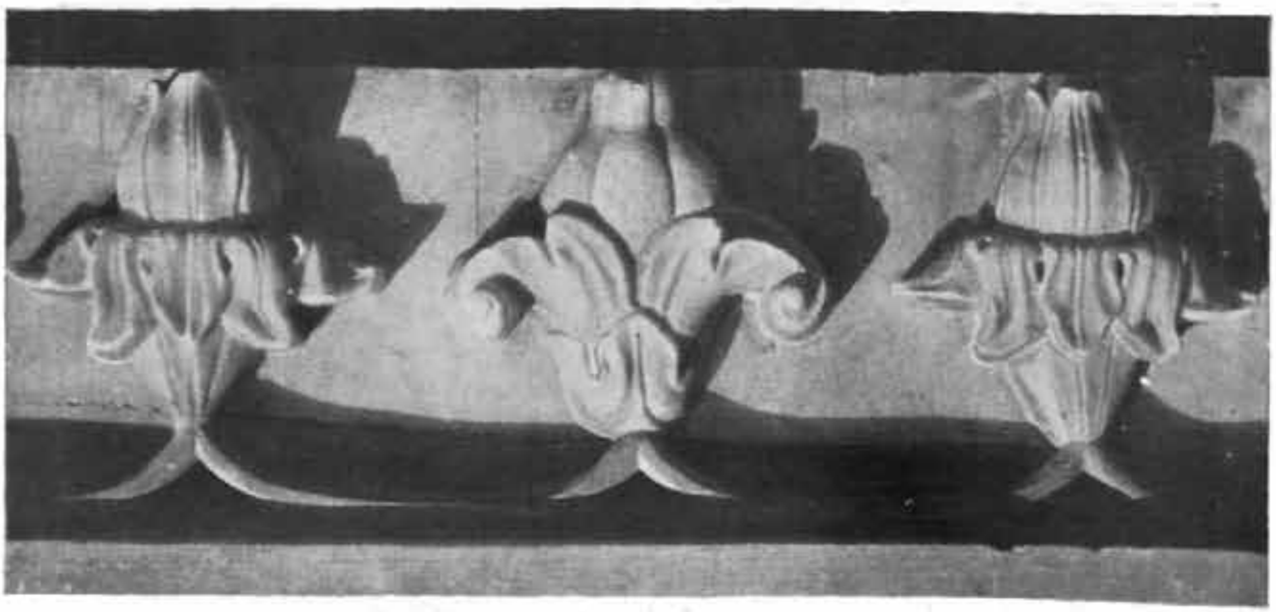


B

Goa Velha : Church of St. Francis of Assisi, south-west corner,
A, *before*, *and* B, *after repairs.* *See p. 96*



A



B

Delhi, Red Fort : Diwan-i-Khas, marble flowers, A, *before, and* B, *after treatment. See p. 101*



A



B

Goa Velha : carved wooden panel on west wall of Blessed Sacrament of Sé Cathedral. A, *during and* B, *after gilding.* *See p. 102*



A

B



A, *Goa Velha : carved marble throne in Basilica of Bom Jesus during treatment;*
B, *Nurpur ; Brajraj-bihari temple, painting, during treatment. See pp. 102 and 104*